

A204/A206/A207/A208/A210/A211 COPIER SERVICE MANUAL

The A204 copier is based on the A153 copier.

The A206 copier is based on the A155 copier.

The A207 copier is based on the A156 copier.

The A208 copier is based on the A157 copier.

The A210 copier is based on the A159 copier.

The A211 copier is based on the A160 copier.

Only the differences from the base copiers are described in the following pages. Therefore, this documentation should be treated as an insert version of the base copier's service manual, although it has a separate binder. It should always be utilized together with the base copier's service manual.

1. SPECIFICATIONS

NOTE: Only items marked with * are different from A153, A155, A156, A157, A159, and A160 copiers.

- Configuration:Desktop
- Copy Process:Dry electrostatic transfer system
- Originals:Sheet/Book
- Original Size:Maximum: A3/11" x 17"
- Copy Paper Size:Maximum: A3/11" x17" (Paper trays)
Minimum: A5/8 1/2" x 5 1/2" sideways (Paper trays)
A4/11" x 8 1/2" sideways (LCT)
A6/5 1/2" x 8 1/2" lengthwise (By-pass)
- Duplex Copying:Maximum: A3/11" x 17"
Minimum: A5/8 1/2" x 5 1/2" (sideways)
- * Copy Paper Weight:Paper tray: 52 ~ 128 g/m², 14 ~ 34 lb
By-pass: 52 ~ 157 g/m², 14 ~ 42 lb
LCT: 52 ~ 128 g/m², 14 ~ 34 lb
Duplex copying: 64 ~ 105 g/m², 17 ~ 24 lb
- Reproduction Ratios:4 Enlargement and 6 Reduction

	A4/A3 Version	LT/DLT Version
Enlargement	200%	200%
	141%	155%
	122%	129%
	115%	121%
Full size	100%	100%
Reduction	93%	93%
	82%	85%
	75%	77%
	71%	74%
	65%	65%
	50%	50%

Power Source: 120 V/60 Hz:
 More than 12 A (for North America)
 220 V ~ 240 V/50 Hz:
 More than 7 A (for Europe)
 220 V/50 Hz:
 More than 7 A (for Asia)
 110 V/60 Hz:
 More than 13 A (for Taiwan)
 220 V/60 Hz:
 More than 7 A (for Saudi Arabia, Philippines)

* Power Consumption:

	A204, A206, and A207 copiers		A208, A210, and A211 copiers	
	Copier Only	Full System	Copier Only	Full System
Maximum	1.35 kW	1.40 kW	1.35 kW	1.40 kW
Copying	1.15 kW	1.21 kW	0.90 kW	1.00 kW
Warm-up	1.21 kW	1.23 kW	0.98 kW	1.00 kW
Stand-by	0.18 kW	0.20 kW	0.16 kW	0.18 kW

NOTE: – Full System –
 Copier + ARDF (A663) + Paper Tray Unit (A549) + 20 Bin S/S (A664)

* Noise Emission:

	A204, A206, and A207 copiers	A208, A210, and A211 copiers
	Copier Only	Copier Only
1. Sound Pressure Level		
Operator position	64 dB (A)	63 dB (A)
Standard position	59 dB (A)	58 dB (A)
2. Sound Power Level		
Copying	70 dB (A)	69 dB (A)
Stand-by	42 dB (A)	43 dB (A)

NOTE: The above measurements were made in accordance with ISO 7779.

Dimensions:

	Width	Depth	Height
A204 copier	1,030 mm (40.6")	655 mm (25.8")	606 mm (23.9")
A208 copier	900 mm (35.5")	655 mm (25.8")	606 mm (23.9")
A206 and A207 copiers	1,258 mm (49.6")	655 mm (25.8")	606 mm (23.9")
A210 and A211 copiers	1,128 mm (44.5")	655 mm (25.8")	606 mm (23.9")

Measurement Conditions

- 1) With by-pass feed table closed
- 2) With platen cover and copy tray attached
- 3) With LCT cover closed

* Weight:

	Weight	
	NA	EU
A204 copier	70 kg (154.3 lb)	73 kg (160.9 lb)
A206 copier	78 kg (172.0 lb)	81 kg (178.5 lb)
A207 copier	81 kg (178.6 lb)	84 kg (185.2 lb)
A208 copier	69 kg (152.1 lb)	72 kg (158.7 lb)
A210 copier	77 kg (169.8 lb)	80 kg (176.4 lb)
A211 copier	79 kg (174.2 lb)	82 kg (180.7 lb)

Zoom: From 50% to 200% in 1% steps

* Copying Speed (copies/minute):

	A4 sideways/ 11" x 8½"	A3/11" x 17"	B4/8½" x 14"
A204, A206, and A207 copiers	40	22/21	25
A208, A210, and A211 copiers	32	17/16	19

* Warm-up Time: A204, A206, and A207 copiers:
Less than 250 seconds (20°C)
A208, A210, and A211 copiers:
Less than 110 seconds (20°C)

* First Copy Time:

Paper Feed Station	A4/11" x 8½" (sideways)	
	A204, A206, and A207 copiers	A208, A210, and A211 copiers
1st Tray	4.4 s (except for A207)	4.9 s (except for A211)
2nd Tray	4.9 s	5.4 s
By-pass	4.4 s	4.7 s
LCT	4.4 s	4.9 s

NOTE: In A207 and A211 copiers, the 2nd tray in the above table is called the 1st tray.

- Copy Number Input: Ten-key pad, 1 to 999 (count up or count down)
- Manual Image Density Selection: 7 steps
- Automatic Reset: 1 minute is the standard setting; it can be changed to a maximum of 999 seconds or no auto reset by SP mode.

*** Copy Paper Capacity:**

	Paper Tray	By-pass Feed	LCT
A204 copier	About 500 sheets x 2	About 40 sheets	—
A206 copier	About 500 sheets x 2	About 40 sheets	About 1,000 sheets
A207 copier	About 500 sheets x 1	About 40 sheets	About 1,000 sheets
A208 copier	About 500 sheets x 2	About 40 sheets	—
A210 copier	About 500 sheets x 2	About 40 sheets	About 1,000 sheets
A211 copier	About 500 sheets x 1	About 40 sheets	About 1,000 sheets

NOTE: Paper tray - 500 sheets or less than 53 mm stack height
 By-pass feed - 40 sheets or less than 4 mm stack height
 LCT - 1,000 sheets or less than 120 mm stack height

Duplex Tray Capacity [A207/A211]: 50 sheets (30 sheets for A3/11"x17"
 81 ~ 105g/m², 21.5 ~ 27.9 lb paper)

Toner Replenishment: Cartridge exchange (415 g/cartridge)

- * Optional Equipment:**
- Platen cover
 - Document feeder
 - Paper tray unit with two paper trays
 - Paper tray unit with three paper trays
 - 10 bin micro sorter (for A208, A210, and A211 copiers)
 - 20 bin mini sorter
 - 10 bin sorter stapler
 - 20 bin sorter stapler
 - 20 bin multi-position sorter stapler
 - Sorter adapter (required when installing 20 bin mini sorter, 10 bin sorter stapler, 20 bin sorter stapler, or 20 bin multi-position sorter stapler for A208, A210, and A211 copiers)
 - Key counter
 - Tray heater

- Optical anti-condensation heater
 - Original length sensor for 11" x 15" size paper (only for LT/DLT version)
 - ADS sensor for particular types of red original
-
- Specifications are subject to change without notice.

2. MACHINE CONFIGURATION

2.1 COPIER

A204 copier

500
500

A206 copier

500	1,000
500	

A207 copier

Duplex Tray	1,000
500	

A208 copier

500
500

A210 copier

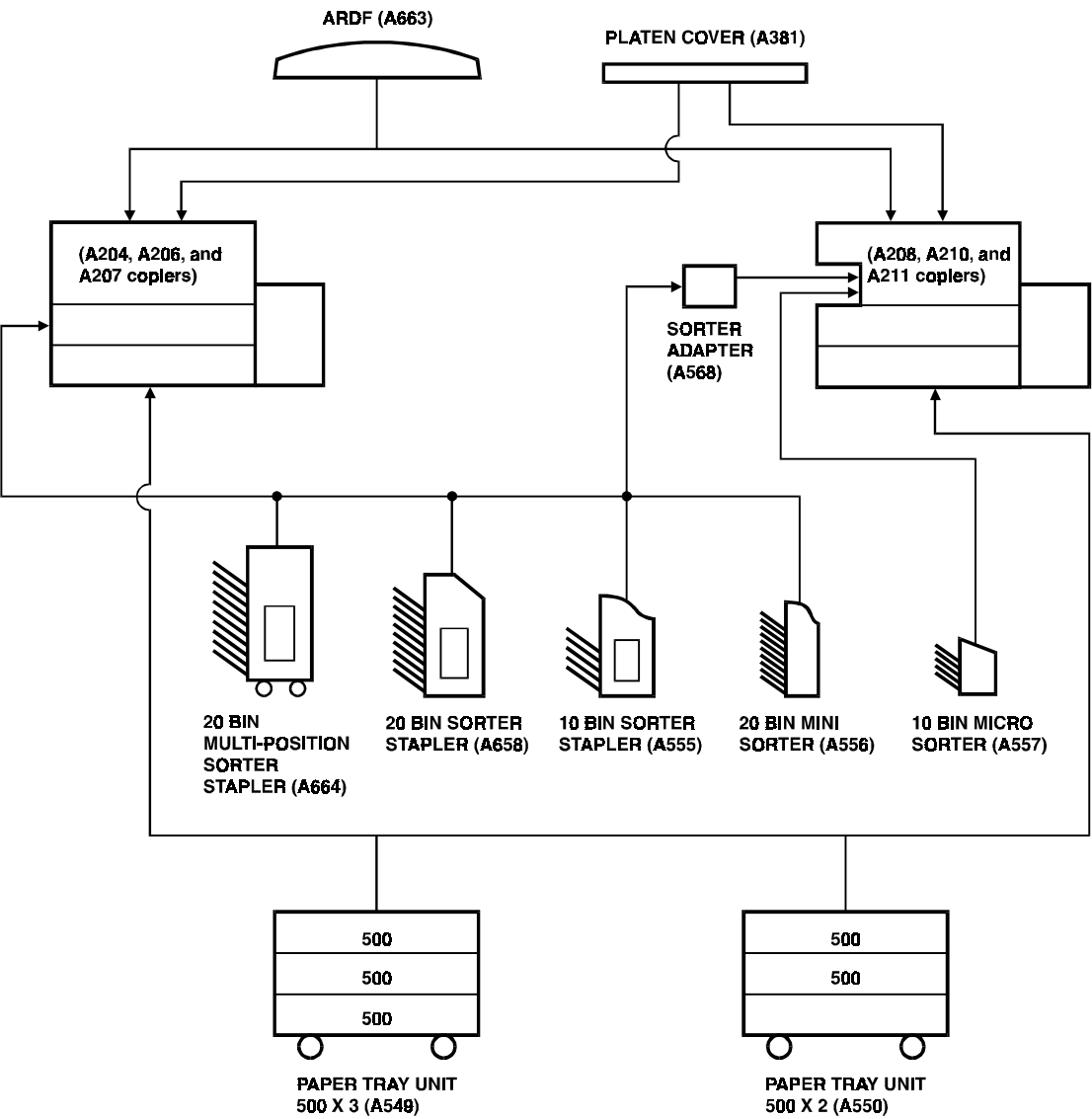
	1,000
500	
500	

A211 copier

	1,000
Duplex Tray	
500	

A204V500.wmf

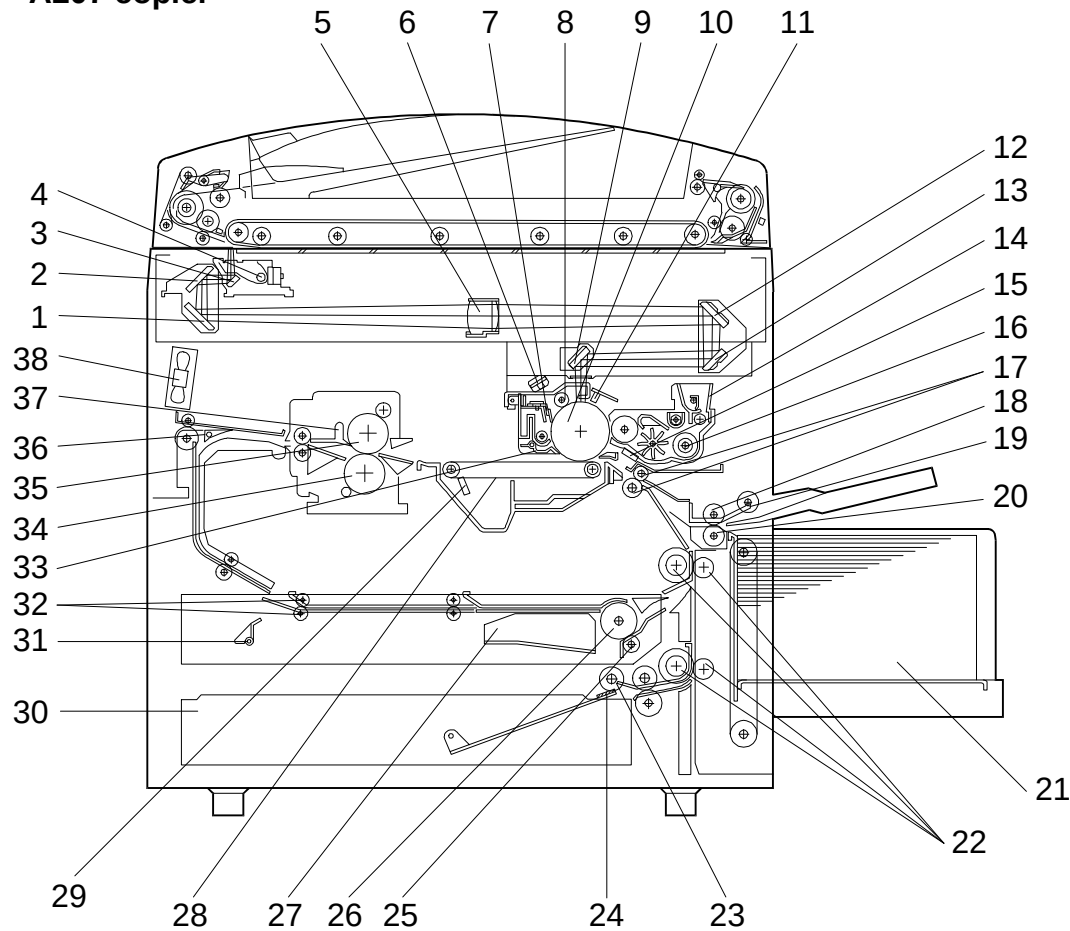
2.2 OPTIONAL EQUIPMENT



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3. MECHANICAL COMPONENT LAYOUT

– A207 copier –

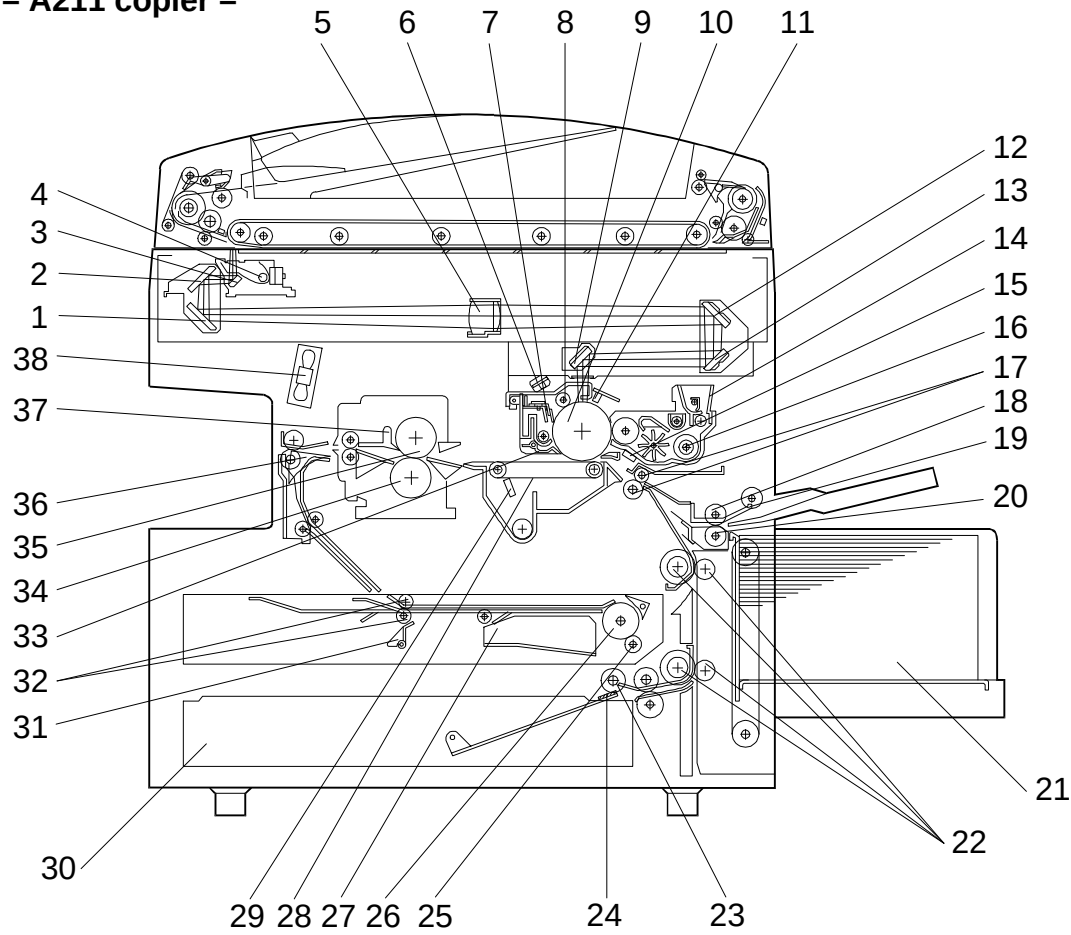


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The fusing unit has been changed. (See Detailed Descriptions for more information.)

- NOTE:** 1) The A204 copier is the same as the A207 copier except that the A204 does not have a duplex tray or an LCT.
- 2) The A206 copier is the same as the A207 copier except that the A206 does not have a duplex tray.

- A211 copier -



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The paper tray unit has been changed from the corner separation system to the FRR feed system.

- NOTE:** 1) The A208 copier is the same as the A211 copier except that the A208 does not have a duplex tray or an LCT.
- 2) The A210 copier is the same as the A211 copier except that the A210 does not have a duplex tray.

1. 3rd Mirror
2. 2nd Mirror
3. 1st Mirror
4. Exposure Lamp
5. Lens
6. Quenching Lamp
7. Drum Cleaning Blade
8. Drum Charge Roller
9. 6th Mirror
10. OPC Drum
11. Erase Lamp
12. 4th Mirror
13. 5th Mirror
14. Toner Supply Unit
15. Pre-transfer Lamp
16. Development Unit
17. Registration Rollers
18. Feed Roller
19. Pick-up Roller
20. Separation Roller
21. Large Capacity Tray
22. Vertical Transport Rollers
23. Paper Feed Roller
24. Friction Pad
25. Duplex Friction Roller
26. Duplex Feed Roller
27. Jogger Fence
28. Transfer Belt
29. Transfer Belt Cleaning Blade
30. Lower Paper Tray
31. End Fence
32. Entrance Rollers
33. Pick-off Pawls
34. Pressure Roller
35. Hot Roller
36. Junction Gate
37. Hot Roller Strippers
38. Exhaust Fan

4. ELECTRICAL COMPONENT DESCRIPTIONS

Refer to the electrical component layout and the point to point diagram on the waterproof paper in the pocket for symbols and index numbers.

* : New or modified components

Symbol	Name	Function	Index No.
Printed Circuit Boards			
PCB1	Main Control	Controls all copier functions both directly or through other control boards.	13
PCB2	AC Drive	Provides ac power to the exposure lamp and fusing lamps.	11
PCB3	DC Power Supply	Provides dc power.	10
PCB4	Main Motor Control	Controls the rotation of the main motor.	94
PCB5	CB High Voltage Supply	Supplies high voltage to the drum charge roller and development roller.	1
PCB6	T High Voltage Supply	Supplies high voltage to the transfer belt.	52
PCB7	Operation Panel	Controls the LED matrix, and monitors the key matrix.	3
PCB8	Noise Filter (220 ~ 240 V machines only)	Removes electrical noise.	8
PCB9	Duplex Control (Duplex machines only)	Controls the operation of the duplex tray.	60
PCB10	Liquid Crystal Display (A207 machines only)	Controls the guidance display and displays guidance for machine operation.	6
PCB11	LCT Interface (LCT machines only)	Interfaces the LCT control signal between the main board and the LCT.	100
Motors			
M1	Main	Drives the main unit components.	85
M2	Toner Bottle Drive	Rotates the toner bottle to supply toner to the toner supply unit.	76
* M3	Upper Tray Lift (Non-duplex machines only)	Raises the bottom plate in the upper paper tray. * A204/206/208/210: M3 and M4 are combined into one unit	95
* M4	Lower Tray Lift	Raises the bottom plate in the lower paper tray.	83
M5	LCT Lift (LCT machines only)	Lifts up and lowers the LCT bottom plate.	97
M6	Optics Cooling Fan 1	Removes heat from the optics unit.	92
* M7	Optics Cooling Fan 2	Removes heat from the optics unit. * A208/210/211 now have two fans.	93
M8	Exhaust Fan 1	Removes the heat from around the fusing unit.	87

Symbol	Name	Function	Index No.
M9	Exhaust Fan 2 (A204/A206/A207 machines only)	Removes the heat from around the fusing unit.	88
M10	Scanner Drive	Drives the 1st and 2nd scanners (dc stepper motor).	90
M11	3rd Scanner Drive	Drives the 3rd scanner (dc stepper motor).	75
M12	Lens Vertical Drive	Shifts the lens vertical position.	84
M13	Lens Horizontal Drive	Shifts the lens horizontal position.	74
M14	Duplex Feed (Duplex machines only)	Drives the feed roller and moves the bottom plate up and down.	55
M15	End Fence Jogger (Duplex machines only)	Drives the end fence jogger to square the paper stack.	58
M16	Side Fence Jogger (Duplex machines only)	Drives the side fence jogger to square the paper stack.	57
* M17	DC Board Cooling Fan Motor (A204/A206/A207 N. American models)	Removes heat from the dc power supply board.	86
Sensors			
S1	By-pass Feed Paper Width	Informs the CPU what width paper is in the by-pass feed table.	26
S2	By-pass Feed Paper End	Informs the CPU that there is no paper in the by-pass tray.	30
S3	Upper Tray Paper End (Non-duplex machines only)	Informs the CPU when the upper paper tray runs out of paper.	48
S4	Upper Relay	Detects the leading edge of paper from the upper tray to determine the stop timing of the upper paper feed clutch, and detects misfeeds.	105
* S5	Upper Tray Upper Limit (Non-duplex machines only)	Detects the height of the paper stack in the upper paper tray to stop the upper tray lift motor. * A208/210/211 have the components needed for an FRR mechanism.	28
S6	Lower Tray Paper End	Informs the CPU when the lower paper tray runs out of paper.	49
S7	Lower Relay	Detects the leading edge of paper from the lower paper tray to determine the stop timing of the lower paper feed clutch, and detects misfeeds.	104
* S8	Lower Tray Upper Limit	Detects the height of the paper stack in the lower paper tray to stop the lower tray lift motor. * A208/210/211 have the components needed for an FRR mechanism.	29

Symbol	Name	Function	Index No.
S9	LCT Lower Limit (LCT machines only)	Sends a signal to the CPU to stop lowering the LCT bottom plate.	98
S10	LCT Paper End (LCT machines only)	Informs the CPU when the LCT runs out of paper.	99
S11	LCT Upper Limit (LCT machines only)	Sends a signal to the CPU to stop lifting the LCT bottom plate.	25
S12	Registration	Detects the leading edge of the copy paper to determine the stop timing of the paper feed clutch, and detects misfeeds.	27
S13	Image Density (ID)	Detects the density of various patterns on the drum during process control.	47
S14	Toner Density (TD)	Detects the toner concentration inside the development unit.	50
S15	Lens Horizontal HP	Informs the CPU that the lens is at the horizontal home position.	36
S16	Lens Vertical HP	Informs the CPU that the lens is at the full-size position.	19
S17	Scanner HP	Informs the CPU when the 1st and 2nd scanners are at the home position.	14
S18	3rd Scanner HP	Informs the CPU when the 3rd scanner is at the home position.	23
S19	Original Length-2	Detects the length of the original. This is one of the APS (Auto Paper Select) sensors.	20
S20	Fusing Exit	Detects misfeeds.	42
S21	Platen Cover	Informs the CPU whether the platen cover is up or down (related to APS/ARE functions). ARE: Auto Reduce and Enlarge	15
S22	Toner End	Instructs the CPU to add toner to the toner supply unit, and detects toner end conditions.	51
S23	Auto Response	Returns the operation panel display and exits from the energy saver mode.	40
S24	Transfer Belt Contact HP	Informs the CPU of the current position of both the transfer belt unit and the drum charge roller unit.	22
S25	Auto Image Density (ADS Sensor)	Detects the background density of each original in ADS mode.	12
S26	Original Width	Detects the width of the original. This is one of the APS (Auto Paper Select) sensors.	41
S27	Original Length-1	Detects the length of the original. This is one of the APS (Auto Paper Select) sensors.	18
S28	Duplex Paper End (Duplex machines only)	Detects paper in the duplex tray.	53

Symbol	Name	Function	Index No.
S29	Duplex Turn (Duplex machines only)	Detects the trailing edge of the copy paper to determine the jogging timing, and detects misfeeds.	54
S30	Duplex Entrance (Duplex machines only)	Detects misfeeds.	59
S31	Side Fence Jogger HP (Duplex machines only)	Detects the home position of the duplex side fence jogger.	56
S32	End Fence Jogger HP (Duplex machines only)	Detects the home position of the duplex end fence jogger.	61
S33	Original Length (Option for N. American models)	Detects original length for 11" x 15" paper.	21
Switches			
SW1	By-pass Feed Table	Detects whether the by-pass feed table is open or closed.	32
SW2	Tray Down (LCT machines only)	Sends a signal to the CPU to lower the LCT bottom plate.	102
* SW3	Upper Tray Paper Size (Non-duplex machines only)	Determines what size of paper is in the upper paper tray, and detects when the tray has been closed. * The upper tray switch has been eliminated.	24
* SW4	Lower Tray Paper Size	Determines what size of paper is in the lower paper tray, and detects when the tray has been closed. * The lower tray switch has been eliminated.	33
SW5	Vertical Guide Set (Non-LCT machines only)	Detects whether the vertical guide is open or not.	31
SW6	LCT Cover-1 (LCT machines only)	Detects whether the LCT cover is open or not.	103
SW7	LCT Cover-2 (LCT machines only)	Cuts the dc power line of the LCT lift motor.	101
SW8	Main	Supplies power to the copier.	39
SW9	Front Cover Safety	Cuts the ac power line and detects whether the front door is open or not.	38
SW10	Exit Cover Safety (A211 machines only)	Cuts the ac power line and detects whether the exit cover is open or not.	45
Magnetic Clutches			
CL1	Toner Supply	Turns the toner supply roller to supply toner to the development unit.	69
CL2	Development	Drives the development roller.	68

Symbol	Name	Function	Index No.
CL3	Transfer Belt Contact	Controls the touch and release movement of both the transfer belt unit and the drum charge roller unit.	91
CL4	Registration	Drives the registration rollers.	70
CL5	By-pass Feed	Starts paper feed from the by-pass feed table or LCT.	71
CL6	Relay	Drives the relay rollers.	73
CL7	Upper Paper Feed (Non-duplex machines only)	Starts paper feed from the upper paper tray.	81
CL8	Lower Paper Feed	Starts paper feed from the lower paper tray.	82
Solenoids			
SOL1	LCT machines: LCT/By-Pass Pick-up Solenoid Non-LCT machines: By-pass Pick-up Solenoid	Picks paper up from the by-pass feed table. When paper is fed from the LCT, this solenoid assists SOL3.	72
SOL2	Junction Gate (Duplex machines only)	Moves the junction gate to direct copies to the duplex tray or to the paper exit.	89
SOL3	LCT Pick-up (LCT machines only)	Picks up paper from the LCT.	96
* SOL4	Upper Tray Pick-up (Non-duplex machines only)	Controls the up/down movement of the pick-up roller in the upper paper tray. * A208/210/211 have the components needed for an FRR mechanism.	77
* SOL5	Lower Tray Pick-up	Controls the up/down movement of the pick-up roller in the lower paper tray. * A208/210/211 have the components needed for an FRR mechanism.	79
* SOL6	Upper Tray Separation (Non-duplex machines only)	Controls the up-down movement of the separation roller in the upper paper tray feed station. * A208/210/211 have the components needed for an FRR mechanism.	78
* SOL7	Lower Tray Separation	Controls the up-down movement of the separation roller in the lower paper tray feed station. * A208/210/211 have the components needed for an FRR mechanism.	80
Lamps			
* L1	Exposure	Applies high intensity light to the original for exposure. * Modified - see the "Optics" section for details.	16

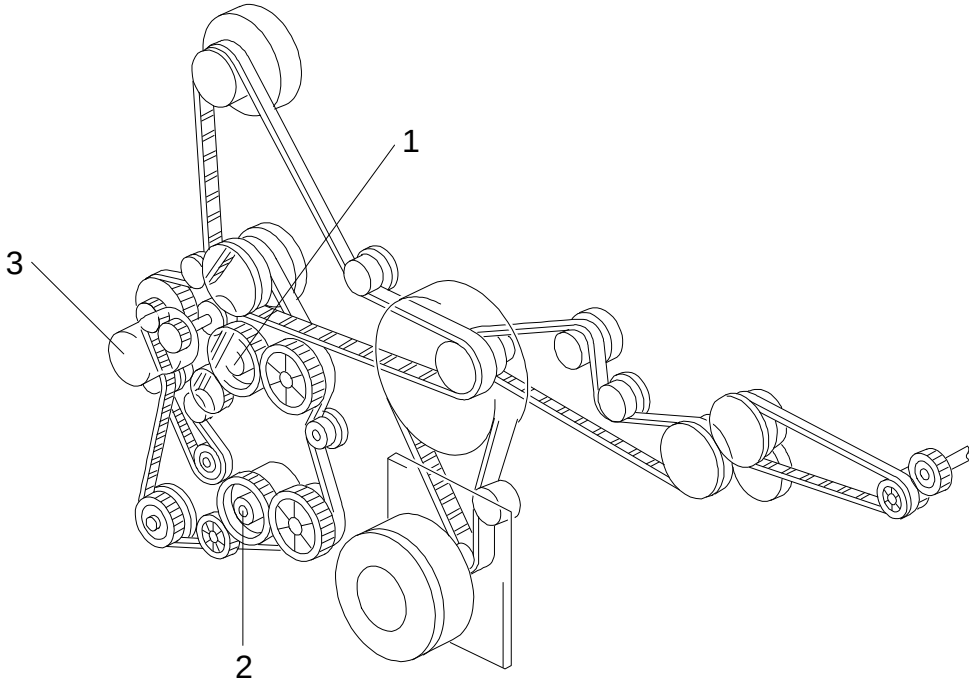
Symbol	Name	Function	Index No.
* L2	Main Fusing	Provides heat to the central area of the hot roller. * Modified - see the "Fusing" section for details.	62
* L3	Secondary Fusing	Provides heat to both ends of the hot roller. * Modified - see the "Fusing" section for details.	63
L4	Pre-transfer	Reduces the charge remaining on the drum surface before transfer.	4
L5	Quenching	Neutralizes any charge remaining on the drum surface after cleaning.	5
L6	Erase	After exposure, this eliminates the charge on areas of the drum that will not be used for the image.	2
Heaters			
H1	Drum	Turns on when the main switch is off to keep the temperature around the drum charge roller at a certain level. Also prevents moisture from forming around the drum.	35
H2	Optics Anti-condensation (option)	Turns on when the main switch is off to prevent moisture from forming on the optics.	43
H3	Lower Tray (option)	Turns on when the main switch is off to keep paper dry in the lower paper tray.	34
Thermistors			
TH1	Main Fusing	Monitors the temperature at the central area of the hot roller.	66
* TH2	Secondary Fusing (A208/A210/A211 machines only)	Monitors the temperature at the ends of the hot roller. * A204/206/207 have only one thermistor.	67
TH3	Optics	Monitors the temperature of the optics cavity.	44
TH4	Drum Charge	Monitors the temperature of the drum charge roller.	46
Thermofuses			
TF1	Main Fusing	Provides back-up overhear protection in the fusing unit.	65
* TF2	Secondary Fusing (A208/A210/A211 machines only)	Provides back-up overhear protection in the fusing unit. * A204/206/207 have only one thermofuse.	64

Symbol	Name	Function	Index No.
TF3	Exposure Lamp	Opens the exposure lamp circuit if the 1st scanner overheats.	17
Counters			
CO1	Total	Keeps track of the total number of copies made.	37
CO2	Key (option)	Used for control of authorized use. The copier will not operate until it is installed.	N/A
Others			
CB1	Circuit Breaker (220 ~ 240 V machines only)	Provides back-up high current protection for electrical components.	9
TR1	Transformer (220 ~ 240 V machines only)	Steps down the wall voltage to 100 Vac.	7
CC1		This has been eliminated from all models.	

Copier

5. PAPER FEED DRIVE LAYOUT

5.1 A204/A206/A207/A208/A210/A211



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Since A208, A210, and A211 have been changed to the FRR feed system, all models carry the same type of drive layout.

1. Upper Paper Feed Clutch Gear (A207/A211 only)
2. Lower Paper Feed Clutch Gear
3. Relay Clutch Gear

6. PROCESS CONTROL

6.1 HALFTONE MODE

This mode is newly added.

If the user selects the halftone mode function on the operation panel, the machine reduces the size of the exposure lamp voltage, development bias, and the drum charge voltage by the changes shown below.

- Exposure Lamp Voltage: -1.0 V
- Development Bias: $+80\text{ V}$
- Drum Charge Voltage: $+300\text{ V}$

6.2 ADS CORRECTION

* Five possible corrections can be selected from, where the base copier has only three.

ADS correction

ADS Density SP5-106		Development Bias Correction Voltage
Setting	Copy Density	
* 0	Darkest	$816 \times (\text{AR} - 0.85) + 60$
1	Darker	$816 \times (\text{AR} - 0.75)$
2	Normal	$816 \times (\text{AR} - 0.85)$
3	Lighter	$816 \times (\text{AR} - 0.95)$
* 4	Lightest	$816 \times (\text{AR} - 0.85) - 60$

Where AR (ADS Ratio) = $\text{VADS (original)} / \text{VADS (pattern)}$

6.3 TONER SUPPLY CONTROL DURING COPYING

* The amount of toner supplied per unit of time (TS) has been changed from the base copier.

Toner clutch on time is calculated by the following formula.

$$\text{Toner CL on time [ms]} = \frac{\mathbf{S \times AT \times TSC/100}}{\mathbf{TS}} \quad (\text{Formula 1})$$

where: S = Copy paper size [cm²]

AT = Amount of toner developed on the latent image per unit area
= 0.7 [mg/cm²] (constant)

TSC = Toner supply coefficient [%]

* TS = Amount of toner supplied per unit of time

= 0.217 [mg/ms] (for A204, A206, and A207 copiers)

= 0.183 [mg/ms] (for A208, A210, and A211 copiers)

6.4 VR PATTERN CORRECTION

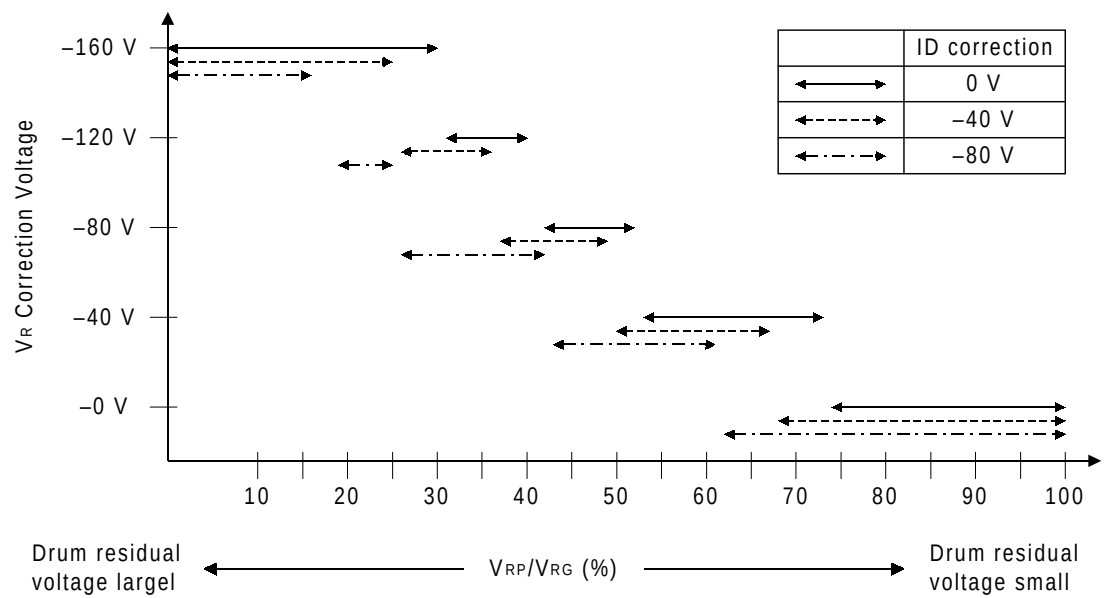
* The values in the ID correction column of the table have been changed.

VR correction

	ID Correction			Drum Charge Roller Correction Voltage	Development Bias Correction Voltage
	±0 V	−40 V	−80 V		
VRP/VRG x 100 (%)	74 ~ 100	68 ~ 100	62 ~ 100	±0 V	±0 V
	53 ~ 73	50 ~ 67	43 ~ 61	−40 V	−40 V
	41 ~ 52	37 ~ 49	26 ~ 42	−80 V	−80 V
	31 ~ 40	26 ~ 36	19 ~ 25	−120 V	−120 V
	0 ~ 30	0 ~ 25	0 ~ 18	−160 V	−160 V

For example, taking the ID correction to be zero for now, if VRP/VRG is 45%, the drum charge and development bias corrections will both be −80 V.

VR correction also depends on the current VSP pattern ID correction that is being used. If development bias has been increased by ID correction, the VR correction may be smaller in some cases to take this into account. This is shown by both the table above and the following diagram.



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Using the same example to illustrate this, but with an ID correction of −80 V, the corrections will both be −40 V this time.

6.5 TONER SUPPLY IN ABNORMAL SENSOR CONDITIONS

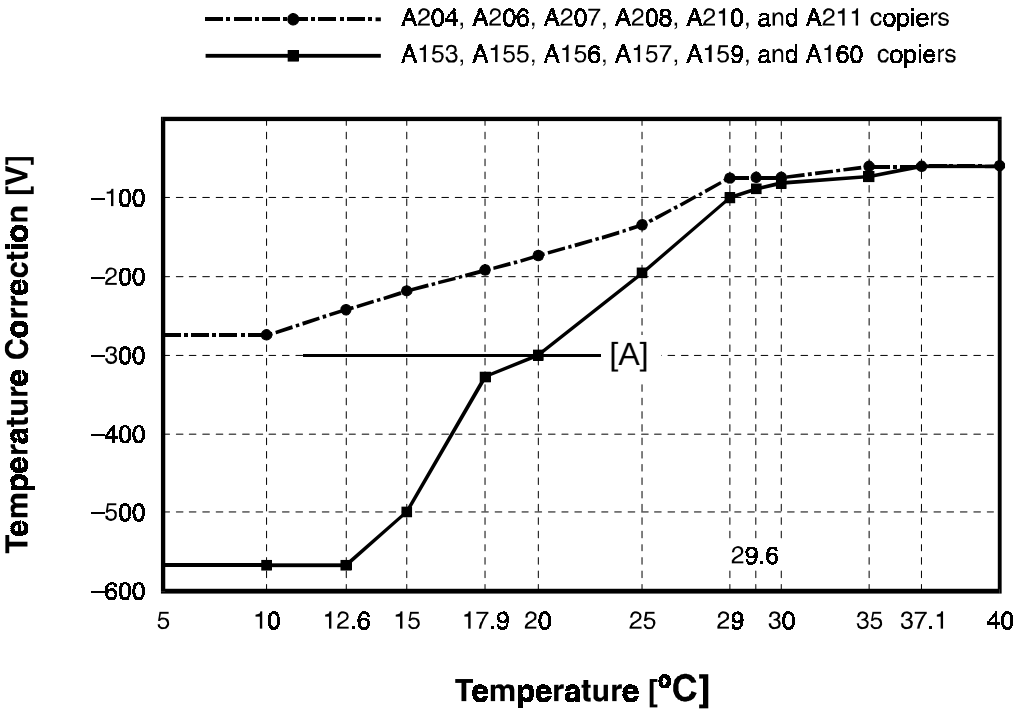
If any sensor errors occur under detect supply mode, toner supply mode is changed automatically as shown below.

Error	Abnormal Condition	Fallback Toner Supply Mode	Display on Operation Panel
ID Sensor Adjustment Error	When ID sensor output cannot be adjusted to $4.0 \pm 0.2 \text{ V}$	Fixed Supply Mode	None
Abnormal ID Sensor (VSP)	If $V_{SP} > 2.5 \text{ V}$ during VSP detection.	Fixed Supply Mode	None
Abnormal ID Sensor (VSG)	If $V_{SG} < 2.5 \text{ V}$ during VSG detection	Fixed Supply Mode	
TD Sensor Adjustment Error	When TD sensor output cannot be adjusted to $2.5 \pm 0.1 \text{ V}$	Fixed Supply Mode	Manual ID level or ADS indicator blinks
TD Sensor (V_T) Measurement Error	If $V_T > 4.0 \text{ V}$ or $V_T < 0.3 \text{ V}$ during V_T detection.	Fixed Supply Mode	Manual ID level or ADS indicator blinks
Drum Charge Thermistor Error	Temperature detected by the drum charge thermistor is below 0°C or above 60°C	Fixed Supply Mode	None
* Abnormal Drum Charge Thermistor Output	Temperature detected by the drum charge thermistor is between 0°C and 14°C	TD Sensor Supply Mode	None

NOTE: No indication is displayed under the "abnormal drum charge thermistor output" condition, because the machine soon recovers due to the heat inside the machine.

6.6 TEMPERATURE CORRECTION

Copier



A204D506.wmf

* The temperature correction has changed as explained below. Also, the machine no longer does the drum rotation time correction.

The temperature correction difference between the A204, A206, and A207 copiers and the A208, A210, and A211 copiers is a result of the difference in copy processing speed (240 mm/s for the A204, A206, and A207 copiers, compared with 200 mm/s for the A208, A210, and A211 copiers).

The new drum charge roller needs only about half the correction voltage used for the base copier. Also, the level of correction needed for the lowest temperature point (5°C) is about the same as the normal room temperature point for the base copier [A].

In the base machine, rotation time correction was only needed for low temperatures where the temperature correction was large. In the new machines, the temperature correction is never greater than -300 V, so the rotation time correction has been eliminated.

The temperature corrections are as shown below.

- Temperature Correction (Copying) - Base drum charge voltage = $-1,500\text{ V}$
- Temperature Correction (VSP Pattern) - Base drum charge = $-1,370\text{ V}$

– A204, A206, and A207 –

Drum Charge Roller Temperature ($^{\circ}\text{C}$)	Temperature Correction	
	VSP Pattern	Copying
$35.0 \leq T$	+53	-57.0
$28.0 \leq T < 35.0$	$-83.5 + 3.9T$	$-211.0 + 4.4T$
$10.0 \leq T < 28.0$	$-217.6 + 8.7T$	$-410.0 + 11.5T$
$T < 10.0$	-130.0	-295.0

– A208, A210, and A211 –

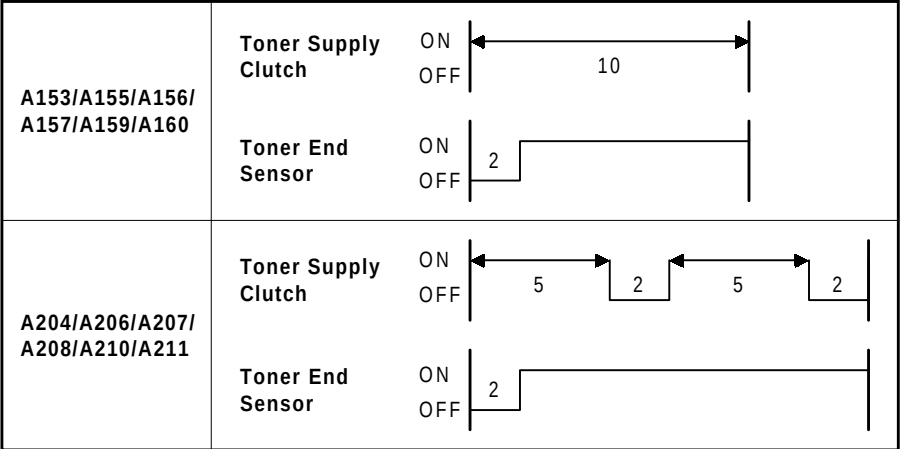
Drum Charge Roller Temperature ($^{\circ}\text{C}$)	Temperature Correction	
	VSP Pattern	Copying
$35.0 \leq T$	+47	-61.0
$29.0 \leq T < 35.0$	$-51.0 + 2.8T$	$-173.0 + 3.2T$
$10.0 \leq T < 29.0$	$-199.1 + 7.9T$	$-355.5 + 9.5T$
$T < 10.0$	-120.0	-260.0

6.7 TONER END RECOVERY

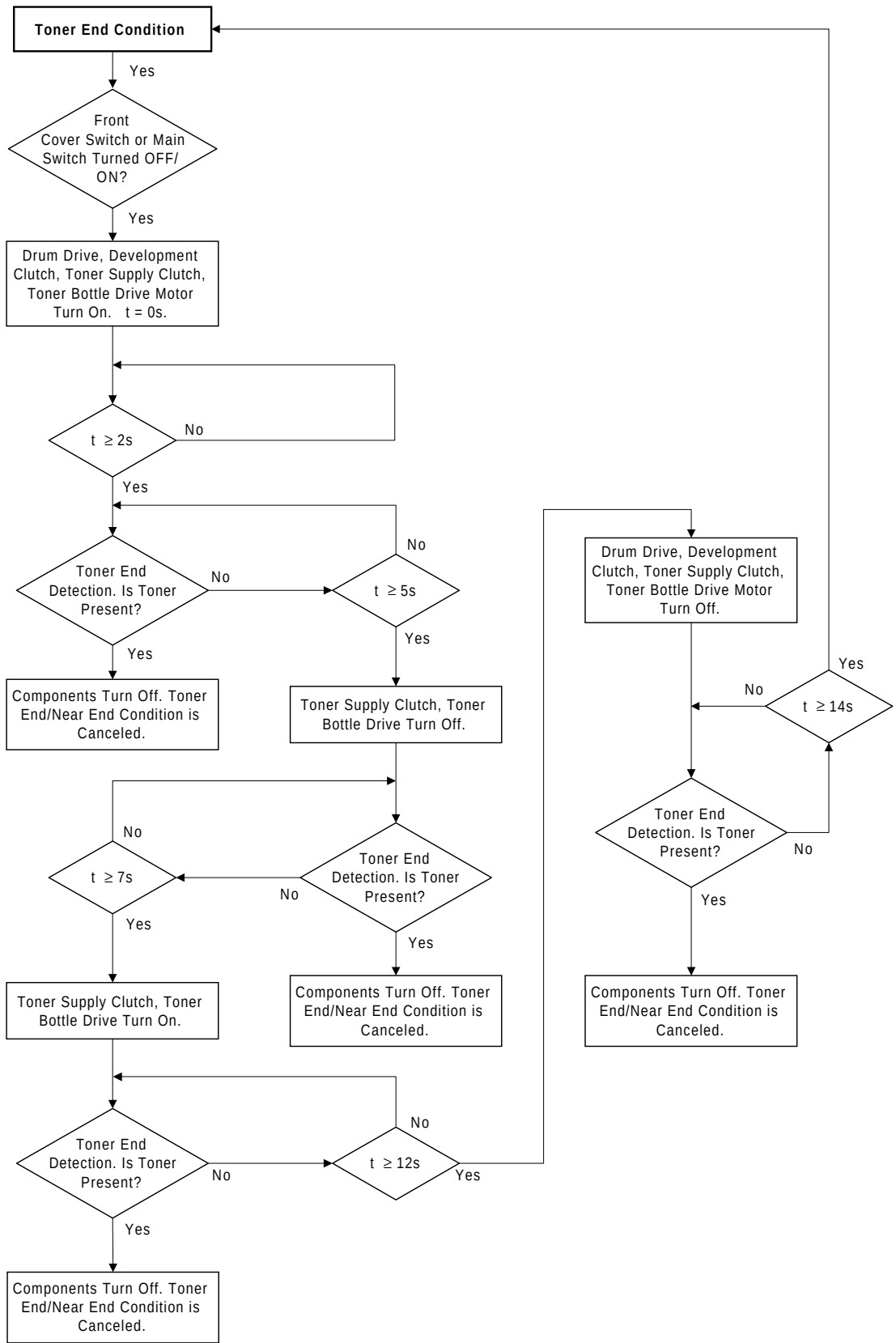
If the front cover switch or the main switch is turned off and on during a toner near-end/end condition, the machine will perform the toner end recovery procedure as shown on the flow chart on the next page.

For the base copier, the toner end sensor checked for toner for a total of 10 seconds. The check stops when the toner supply clutch stops transporting toner.

For the A204 series, the toner sensor checks for toner for a total of 14 seconds, stopping 2 seconds after the toner supply clutch stops. When the toner supply clutch stops, any toner present is likely to drop into the development unit, which will be detected during the final 2 seconds of detection time. This will decrease the chances of a mis-detection when a new toner bottle has been installed by the customer.



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6.8 SUMMARY

NOTE: Only items marked with * are different or reviewed from A153, A155, A156, A157, A159, and A160 copiers.

A summary of process control and correction timing is shown below.

Correction	Electrical Component	Sensor Output Used	Correction Timing		Corrected Value
			Forced Correction	Automatic Correction	
Manual ID correction	Operation panel	—	—	Every copy in manual ID mode	• Lamp voltage • Dev. bias
Reproduction ratio correction	Operation panel	—	—	Every copy in reduce/enlarge mode	Development bias
* Halftone mode	Operation panel	—	—	Every copy in halftone mode	• Lamp voltage • Dev. bias • Drum charge roller voltage
ADS correction	ADS sensor	VADS (pattern) VADS (original)	—	• ADS Mode: Once per original (ARDF mode), or once when the  key is pressed (Platen mode)	Development bias
			New exposure lamp, ADS sensor, after SP4-001 (Exposure lamp voltage adjustment) or optics cleaning	Every 1,000 copies	• VADS (pattern) is stored
ID correction and Toner density control	ID sensor	VSG	New drum, ID sensor or ID sensor cleaning	At the start of each copy job	• Dev. bias • Toner supply clutch ON time
		VSP		About every 10 copies	
	TD sensor	VT	When the developer is changed	Every copy	
Vr correction	ID sensor	VRP, VRG	New drum or ID sensor replacement	After every 1,000 copies	• Drum charge roller voltage • Dev. bias
VL correction	ID sensor	VLP, VLG	New drum, exposure lamp or after SP4-001 (Exposure lamp voltage adjustment)		Lamp voltage
* Temperature correction	Drum charge roller thermistor	T: (temperature)	—	Every copy	Drum charge roller voltage

Copier

Development bias, drum charge voltage, and exposure lamp voltage

NOTE: Only items marked with * are different from A153, A155, A156, A157, A159, and A160 copiers.

The following table shows how process control affects development bias, drum charge, and exposure lamp voltages for various machine operations.

Mode		Development Bias [V]		Drum Charge Voltage [V]	Exposure Lamp Voltage [V]
Copying	ADS mode	$(-240) + \text{ADS correction} + \frac{\text{Reproduction ratio}}{\text{correction}} + \frac{V_R}{\text{correction}} + B$			V_L $V_{\text{exp}} + \text{correction}$
	Manual ID mode	ID Level 1 ~ 6	$(-240) + \frac{\text{Manual ID}}{\text{correction}} + \frac{\text{Reproduction ratio}}{\text{correction}} + \frac{V_R}{\text{correction}}$ + * Halftone Mode + B	V_R + correction + * Temperature correction + * Halftone Mode + C	Manual ID correction + V_L correction + * Halftone Mode
		ID Level 7	$(-240) + \text{Lightest ID level dev.bias} + \frac{\text{Reproduction ratio}}{\text{correction}} + \frac{V_R}{\text{correction}}$ + * Halftone Mode + B		
	VSP Pattern Detection	$(-300) + \text{BP} + \text{ID correction}$		$(*-1370) + \frac{* \text{Temperature correction}}{\text{correction}} + \text{CP}$	0
VR Pattern Detection	Forced VL Detection	0			0
		$\frac{V_R}{\text{BL} + \text{correction}} + \text{VBL (ID)}$		V_R + correction + * Temperature correction	V_{exp}
	VL Detection	$\text{BL} + (-25) + \frac{V_R}{\text{correction}} + \text{VBL (ID)}$		+ C	$V_{\text{exp}} + V_L$ correction
Non Image Area		$\frac{V_R}{(-200) + \text{correction}} + \text{VBL (ID)}$		0	0
Auto ADS Gain Adjustment		0		0	$V_{\text{exp}} + V_L$ correction

NOTE: B = Development bias adjustment factor, selected with SP2-201-001.
BP = Correction to the development bias used for making for VSP patterns, selected with SP2-203.
BL = The value of the development bias that was reached during the most recently performed forced VL detection routine.
VBL (ID) = ID compensation factor based on the current ID correction used for making VSP patterns.
C = Correction to the drum charge voltage, selected with SP2-001.
CP = Correction to the drum charge voltage for making VSP patterns, selected with SP2-003.
Vexp = Exposure lamp voltage, selected with SP4-001.

7. DRUM

7.1 DRUM CHARGE ROLLER CLEANING

* The cleaning interval and the cleaning time have been changed.

The drum charge roller cleaning routine is executed at the following intervals:

- 1) For 2 seconds at the end of every job
- 2) * For 5 seconds after the copy job interval set by SP2-901.

SP2-901 setting: 0: Every 1,000 copies (5 seconds)

- 1: Every 500 copies (5 seconds) [* new default]
- 2: Every 200 copies (5 seconds)
- 3: Every 100 copies (5 seconds)

The effect of the change in the default setting is to do the cleaning more frequently.

8. OPTICS

8.1 OVERVIEW

8.1.1 Halogen Lamp

* The specifications of the halogen lamp have been changed as follows. Note that the A204/A206/A207 models are faster, so they need more light during exposure.

	115 V Machines	230 V Machines
A204/A206/A207	97 V 310 W	85 V 310 W
A208/A210/A211	* 97 V 200 W	* 85 V 280 W

* The halogen lamps installed in the A208/A210/A211 are the same as for the A153/A155/A156 copiers

8.1.2 Toner Shield Glass

* The shield glass by the green filter above the drum has been removed (it is no longer needed).

8.1.3 Optics Cooling Fans

* The optics cooling fan specifications have changed. Both models now have two fans; this is because the cpm for the A207/A210/A211 models has been increased from the previous models (27 → 32). Also the rotating speed has been changed as follows:

	A204/A206/A207	A207/A210/A211
Rotating speed	3,450 rpm	* 3,200 rpm
Rotating temperature	45°C	45°C
Number of fans	2	2

* The rotating speed of 3,200 rpm is as same as for the A153/A155/A156 copiers.

8.2 SCANNER DRIVE

* The scanner drive speeds have changed as follows.

The first scanner drive speed in full size mode is:

240 (mm/s) for A204/A206/A207 copiers

200 (mm/s) for A208/A210/A211 copiers

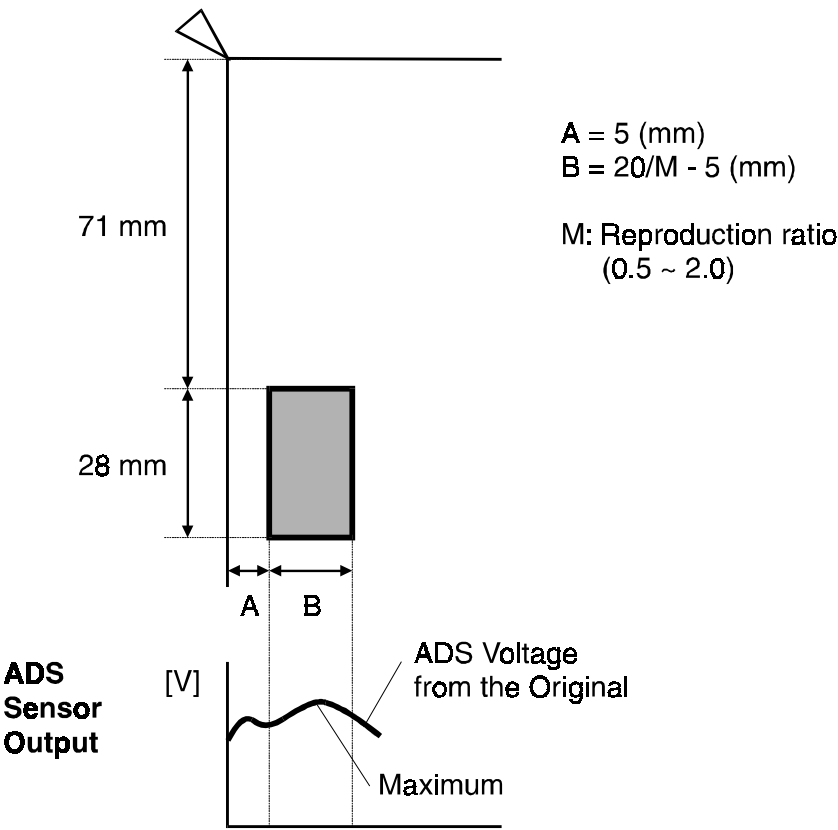
The first scanner drive speed for a selected reproduction ratio is:

240/M (mm/s) for A204/A206/A207 copiers

200/M (mm/s) for A208/A210/A211 copiers

NOTE: M = Selected reproduction ratio (0.5 ~ 2.0)

8.3 ADS SAMPLING DURING COPYING



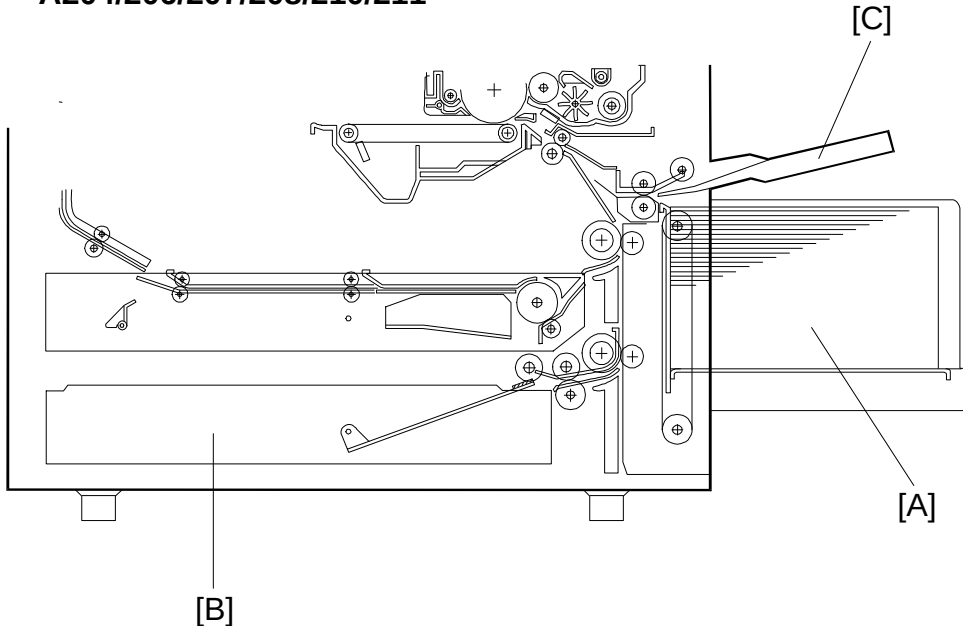
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* The position of the sampling area has been changed (in the base copier, it was 60 mm from the edge and 38 mm wide).

9. PAPER FEED AND REGISTRATION

9.1 OVERVIEW

- A204/206/207/208/210/211 -



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* All of the above-mentioned models use the FRR system.

This model has three paper feed stations: the large capacity tray feed station [A] (LCT machines only), the upper paper tray feed station (non-duplex machines only), and the lower paper tray feed station [B].

The LCT holds 1,000 sheets of paper. The upper and lower paper trays are drawer trays that hold 500 sheets of paper.

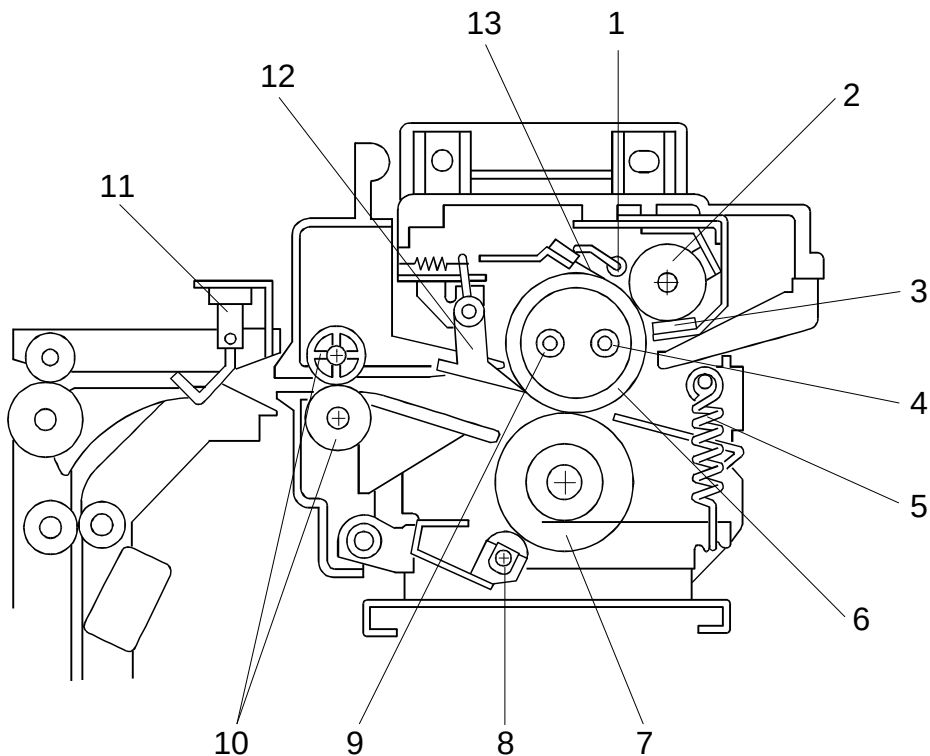
Paper can also be fed using the by-pass feed table [C], which uses the feed mechanism of the LCT feed station. The by-pass feed table can hold 40 sheets of paper. All feed stations use the FRR feed system.

The top sheet of paper separates from the stack and is fed to the relay rollers, then to the registration rollers.

There are two relay sensors, one located just under each set of relay rollers. These sensors are used for paper jam detection.

10. IMAGE FUSING (A204/A206/A207 COPIERS)

10.1 OVERVIEW



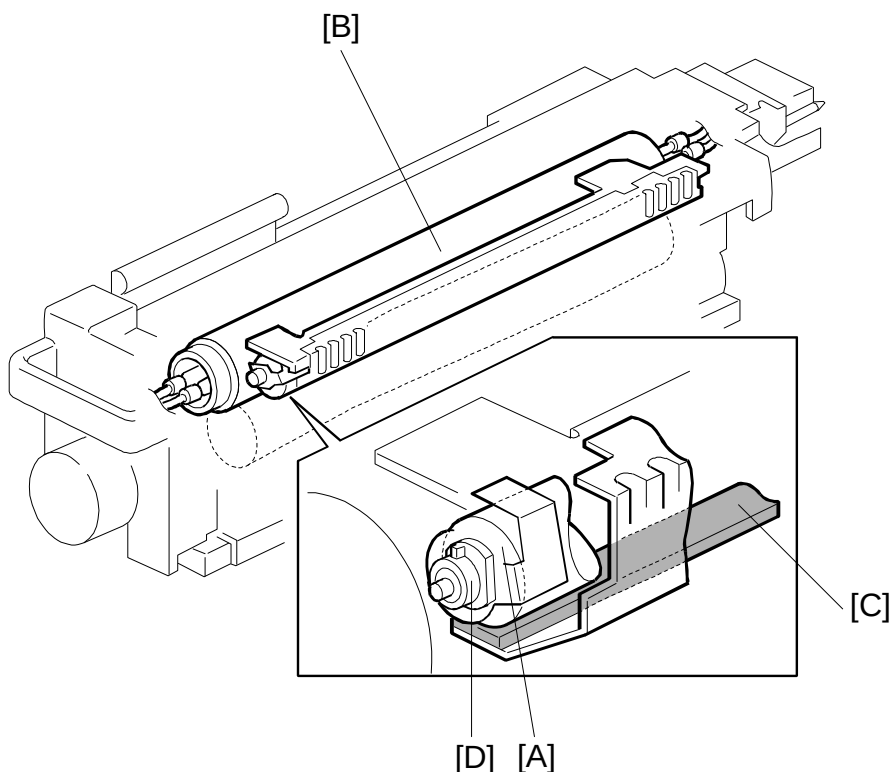
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- * 1. Thermofuse
- * 2. Oil Supply Roller
- * 3. Oil Supply Roller Cleaning Brush
- * 4. Main Fusing Lamp
- 5. Pressure Springs
- * 6. Hot Roller
- 7. Pressure Roller
- 8. Cleaning Roller
- * 9. Secondary Fusing Lamp
- 10. Fusing Exit Rollers
- 11. Fusing Exit Sensor
- 12. Hot Roller Strippers (7 pcs)
- * 13. Thermistor

The fusing unit for the A204/206/207 has several new features, which are described in the following pages.

NOTE: The fusing unit for the A208/210/211 is the same as the fusing unit for the A153/155/156 except for the drawer connector (the shape for changed), and uses the same parts (hot roller, etc).

10.2 OIL SUPPLY MECHANISM



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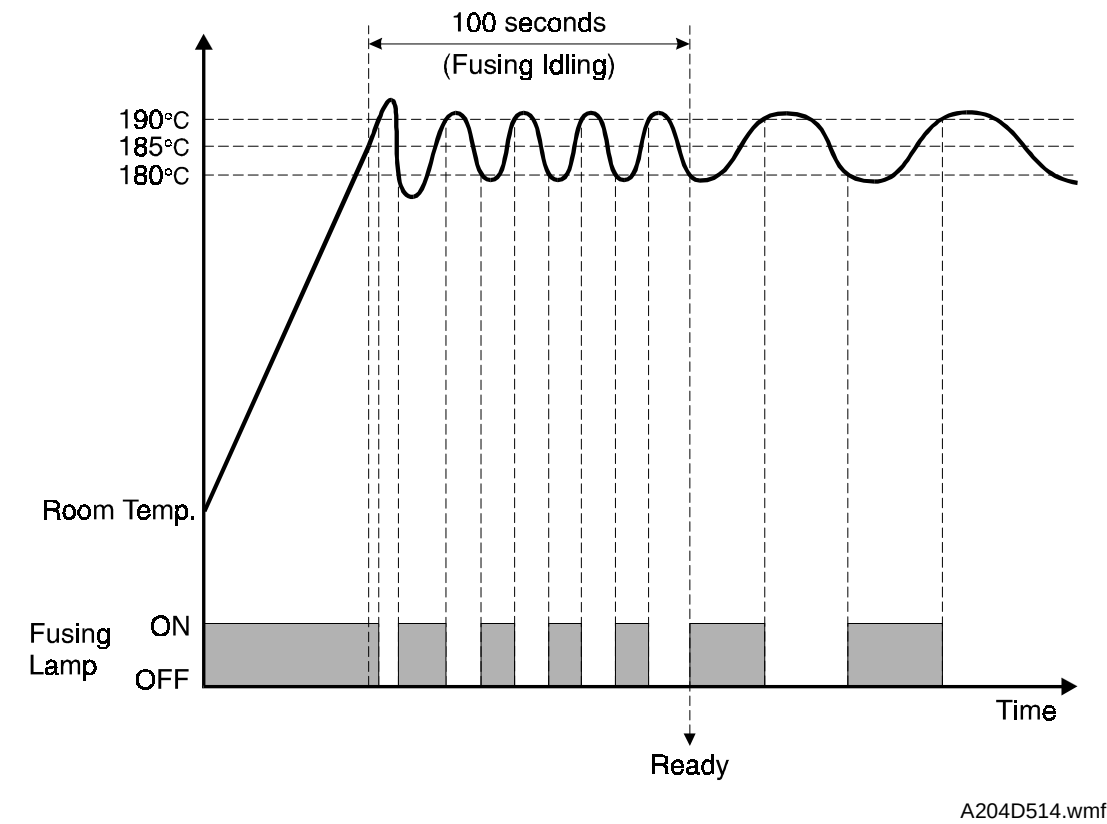
The oil supply is necessary for a 40 cpm copier. An oil supply roller [A] is installed above the hot roller [B]. It is always in contact with the hot roller, and applies a light coat of silicone oil as the roller rotates.

The oil supply roller is made of paper soaked with silicone oil wrapped around the shaft, and covered with PTFE (polytetra fluoroethylene) tube. As the temperature of the hot roller rises, the PTFE tube contracts and squeezes the oil-soaked paper, and the oil comes out through the coating.

The oil supply roller cleaning brush [C] under the oil supply roller removes the toner and paper dust accumulated on the oil supply roller.

The oil supply roller shaft is installed on a one-way bushing [D], to prevent collected toner from returning to the hot roller surface by the customer operating the fusing knob manually in the reverse direction.

10.3 FUSING LAMP CONTROL



There are two fusing lamps in the hot roller: the main fusing lamp (800 W) [A] and the secondary fusing lamp (350 W) [B].

The main fusing lamp has a much higher wattage than the one in the base copier, because it is the only lamp that is used during copying to control the operating temperature of the fusing unit (185°C).

The secondary fusing lamp is only used in the following conditions to help achieve a faster warm-up time.

- When the main switch is turned on
- When exiting from the energy saver mode

The new hot roller's metal core is thicker than the base copier's hot roller's. The new roller holds heat much better, to allow multicopying at the higher cpm of this model without the hot roller temperature dropping too far. However, it takes a lot longer to warm up after switching on (see the Warm-up Time in the Specifications section).

The temperature is only monitored at the center; there is only one fusing thermistor. There is also only one thermofuse.

When the main switch turns on, the CPU checks the mains frequency for 500 ms; this is done in case phase control mode is selected later. Then the CPU turns on the main fusing lamp. After 3 more seconds, the secondary fusing lamp is turned on. This delay reduces the surge current after the main switch is turned on.

Both lamps are turned on to raise the temperature of the hot roller's surface. When the thermistor detects the operating temperature (185°C), the copier turns off the secondary fusing lamp, and starts fusing idling for 100 seconds to warm up the hot roller completely and evenly (the roller has a thicker metal core), and to distribute the oil. During fusing idling, the temperature is kept at 185°C.

When fusing idling is finished, the copier enters the ready condition. The CPU keeps the temperature at 185°C by turning off and on the main fusing lamp. The lamp is turned off at 190°C, and on at 180°C.

If the fusing lamp turns on while the exposure lamp is on, the power supplied to the exposure lamp may fluctuate, possibly degrading the copy quality. To prevent this, in this machine, the fusing lamp can either stay off or change from on to off while the exposure lamp is on.

There are two types of fusing unit control: on/off control, and phase control. The mode can be selected with SP1-104.

11. INSTALLATION

11.1 COPIER ACCESSORY CHECK

Check the accessories against the following list:

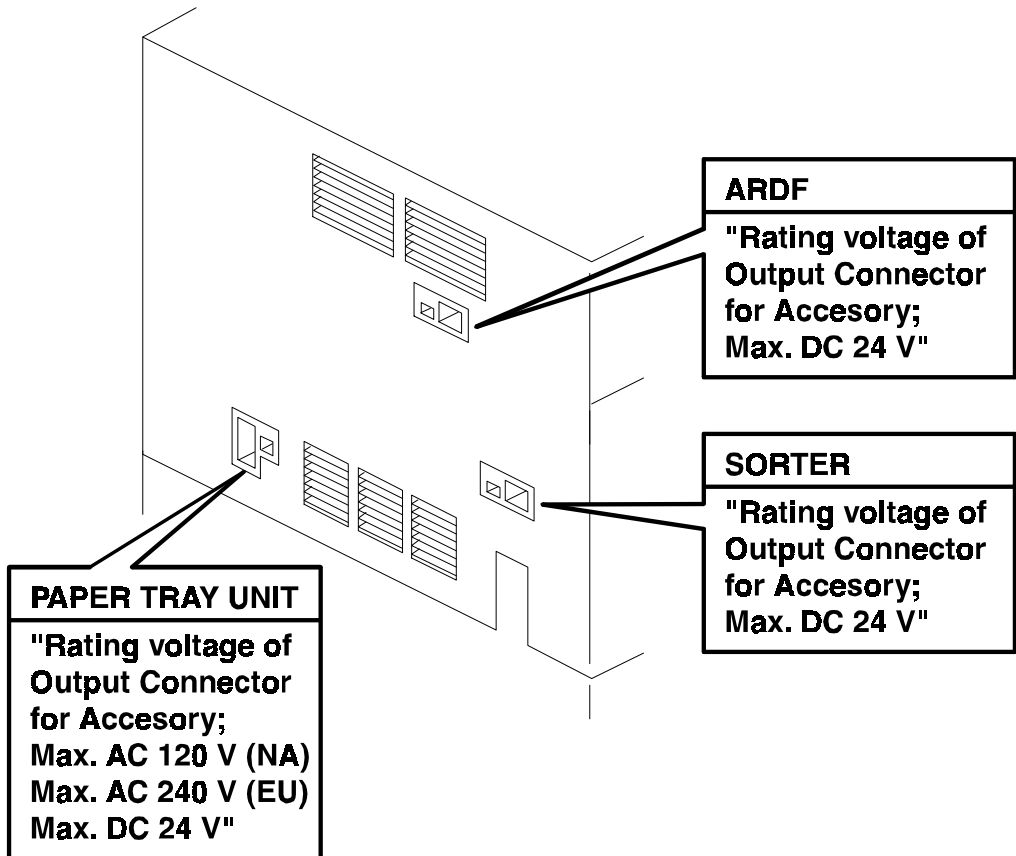
Description	Q'ty
1. Paper Size Decal.....	1
2. Symbol Explanation Decal (except for the A207 copier)	1
3. Optional Zoom Function Decal.....	1
4. Optional Margin Adjustment Function Decal.....	1
5. Combine Originals Explanation Decal (except for the A207 copier)	1
6. Receiving Tray.....	1
7. Operating Instructions (except for -27 machines)	1
8. User Survey Card (-17 machines only)	1
9. New Equipment Condition Report	1
10. Cushion	1

11.2 COPIER INSTALLATION PROCEDURE

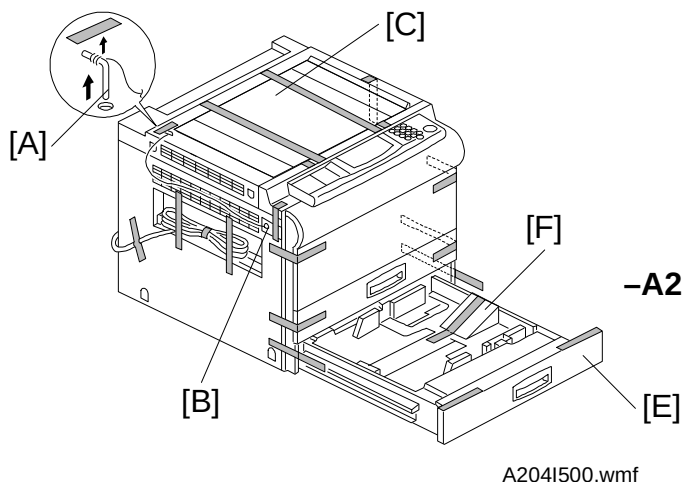
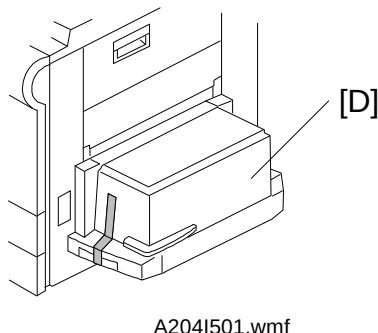
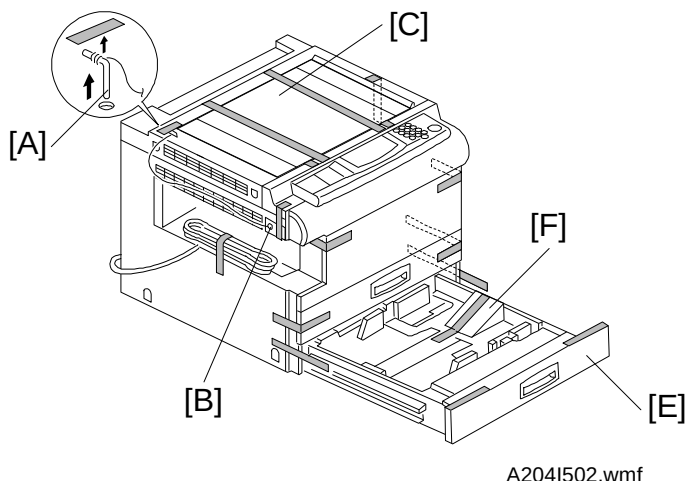
⚠ CAUTION

Rating Voltage for Peripherals

Make sure to plug the cables into the correct sockets.

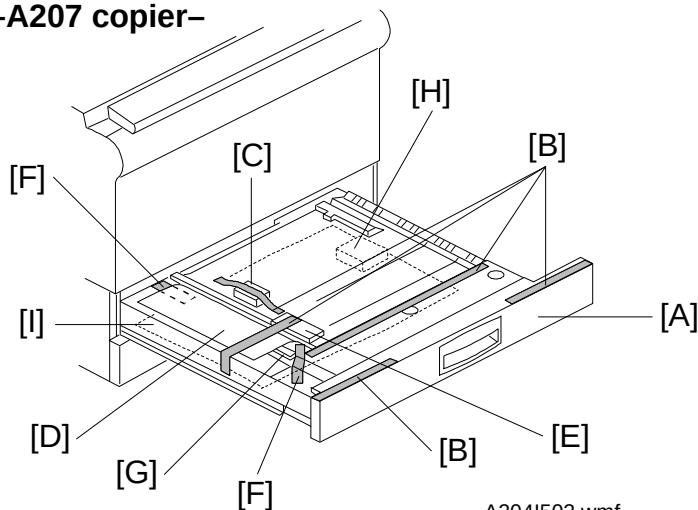


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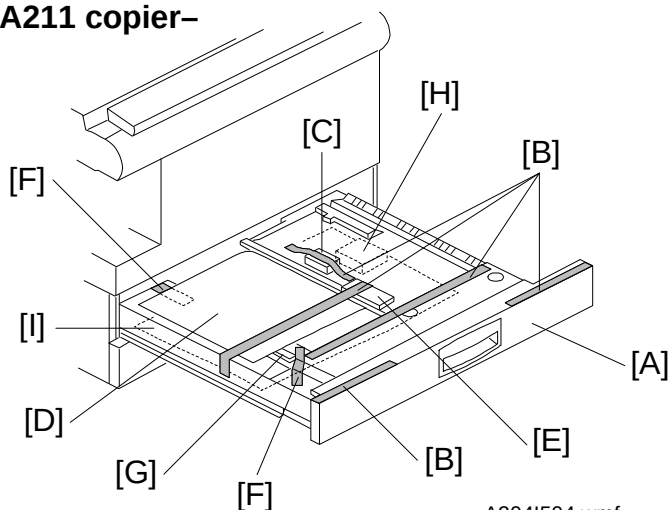
–A204/A206/A207 copiers–**–A206/A207/A210/A211 copiers–****–A208/A210/A211 copiers–**

- NOTE:** 1) Never lift the machine by holding the LCT, or the LCT will break.
 2) Keep the shipping retainers after installing the machine. They will be reused if the machine is moved to another location in the future.
 3) Proper reinstallation of the shipping retainers is required in order to avoid any transport damage. It is most important to put back the scanner lock pin when transporting this copier. If not, skewed image may result.

1. Remove the scanner lock pin [A] and red tag [B] as shown.
2. Remove the strips of tape and the sheet of paper [C]. Also, for A206/207/A210/A211 copiers, remove the strip of tape on the LCT [D].
3. Pull out the paper tray [E], and remove the strips of tape and the bottom plate stopper [F]. Then install the paper tray in the copier (1 tray for duplex machines and 2 trays for non-duplex machines).

-A207 copier-

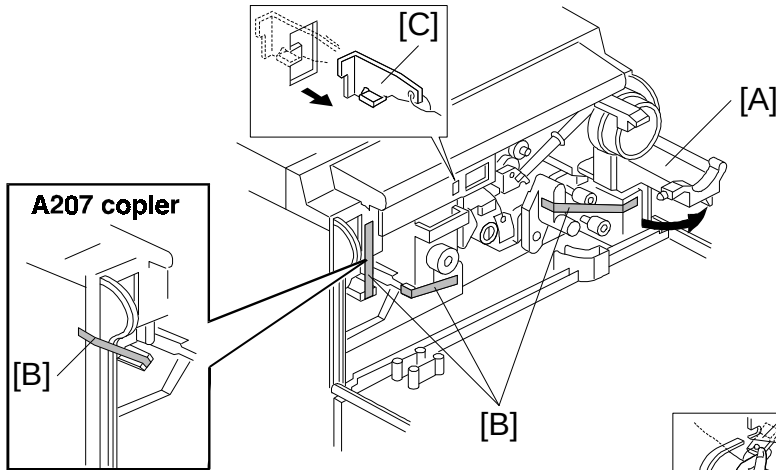
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-A211 copier-

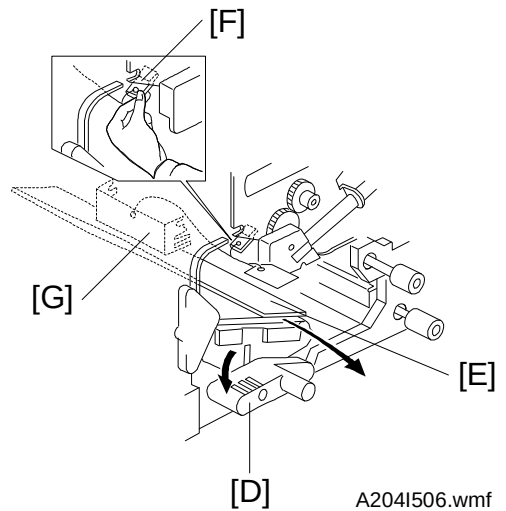
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4. A207/A211 copiers only:

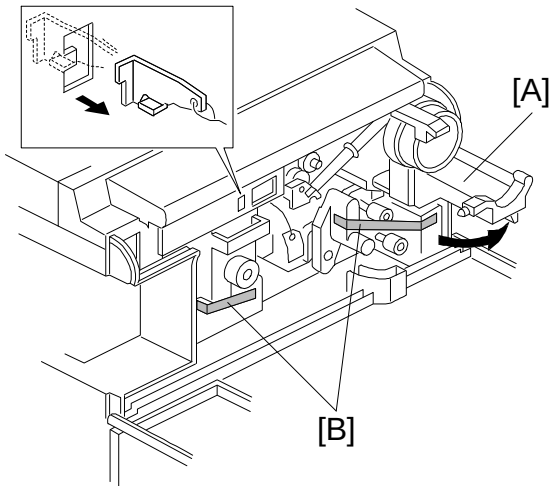
- 1) Pull out the duplex tray [A] and remove the strips of tape [B].
- 2) Remove the guide roller stopper [C] and a sheet of paper [D].
- 3) Open the upper duplex guide plate [E] and remove the strips of tape [F].
- 4) Open the lower duplex guide plate [G], and remove the styrofoam support [H] and the sheet of paper [I].
- 5) Install the duplex tray in the copier.

–A204/A206/A207 copiers–

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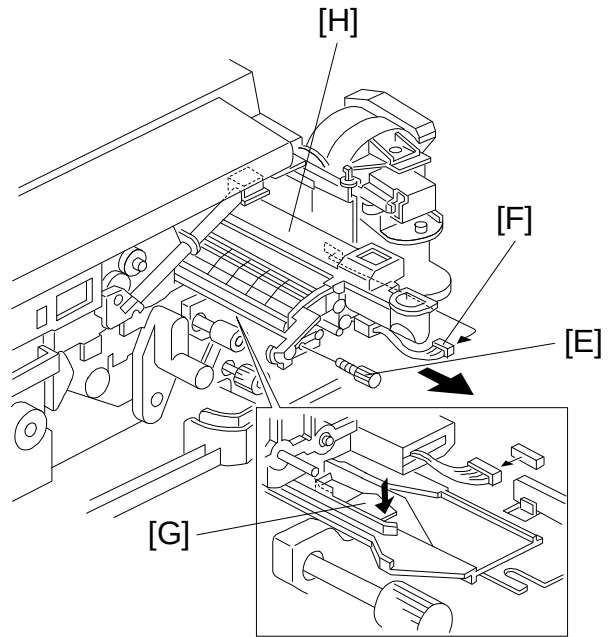
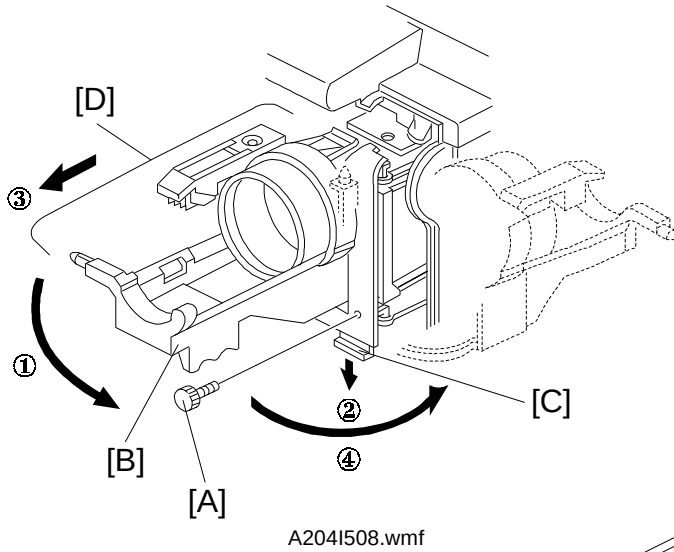
–A208/A210/A211 copiers–

A204I506.wmf

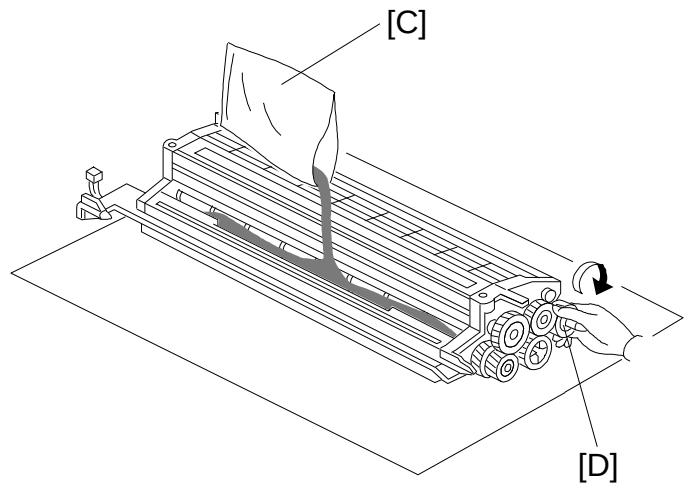
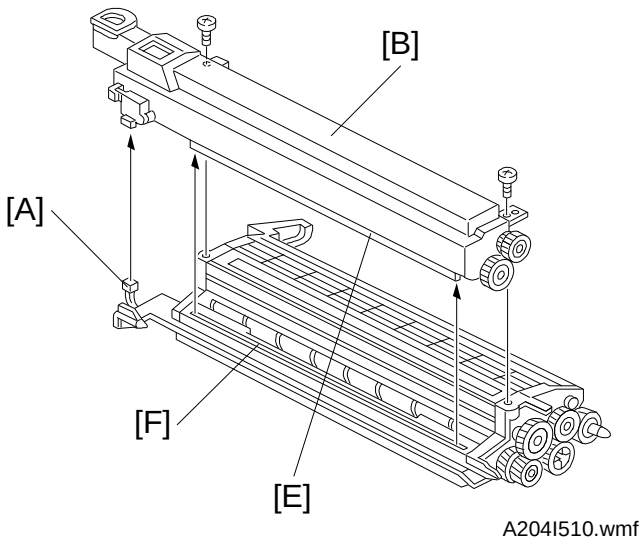


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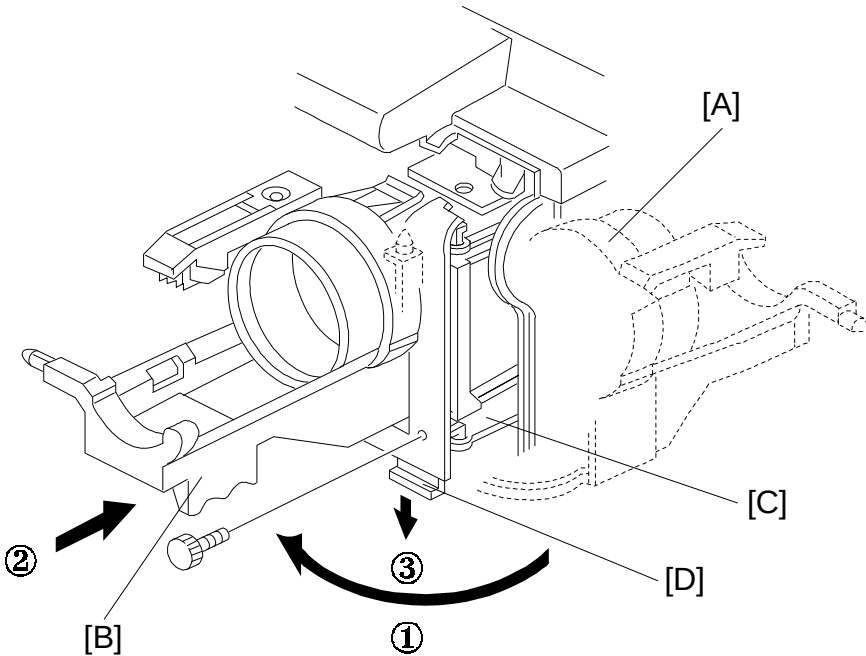
5. Open the front cover and swing out the toner bottle holder [A].
6. Remove the strips of tape [B].
7. Remove the switch actuator lock bracket [C] as shown.
8. Turn the "A1" lever [D] counterclockwise to lower the transfer belt unit. Then remove the cushion sheet [E].
9. Remove the blade release wedge [F] together with the pick off pawl release mylar [G].
10. Return the "A1" lever to the set position.



11. Remove the knob screw [A].
12. ① Swing out the bottle holder [B] and ② pull down the lock lever [C].
③ Then slide out the bottle holder assembly [D] and ④ swing out the bottle holder assembly [D].
13. Remove the knob screw [E] and disconnect the white connector [F].
14. Pull down the development unit lock lever [G] from under the plate and pull out the development unit [H]. Then place it on a clean sheet of paper.

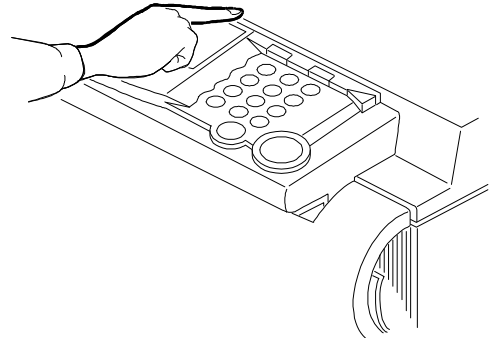


15. Disconnect the connector [A] and separate the toner supply unit [B] from the development unit (2 screws).
16. Pour about half a pack of developer [C] into the development unit. Then rotate the outer gear [D] as shown to distribute the developer evenly. Then pour in all the remaining developer and rotate the gear again.
NOTE: To prevent the developer from spilling, do not rotate the gears in the other direction.
17. Remount the toner supply unit on the development unit (2 screws) and connect the white connector.
NOTE: Make sure that the positioning rib [E] sits in the groove [F].
18. Install the development unit in the copier (1 knob screw and 1 connector).



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19. Swing in the bottle holder assembly [A] so that the toner bottle holder [B] and the slide rail [C] are aligned straight.
- IMPORTANT:** Do not swing the bottle holder fully into the machine before doing step 20.
20. Slide the bottle holder assembly in as described below:
- 1) Slide the bottle holder assembly into its lock position while pressing down the bottle holder lock lever [D].
 - 2) When the bottle holder assembly reaches its lock position, push up the bottle holder lock lever so that the knob screw holes are aligned.
 - 3) Secure the bottle holder lock lever with the knob screw.
- NOTE:** Do not swing the bottle holder assembly all the way into its original position in the machine without sliding and locking it into position exactly as described above. Otherwise, the assembly will be damaged.
21. Install a toner bottle by following the instructions placed on the reverse side of the front cover.
22. Swing in the toner bottle holder to its original position and close the front cover.
23. Plug in the copier and turn on the main switch.



A204I513.wmf

24. Enter SP mode as follows:

- 1) Press the key.
- 2) Enter "107" using the numeric keys.
- 3) Hold down the key for more than 3 seconds.

NOTE: When SP mode is selected, "1" blinks in the 3rd digit of the copy counter, the Auto Image Density indicator starts blinking, and the reduce/enlarge indicator turns off.

25. Perform the "TD sensor initial setting" SP mode as follows:

- 1) Enter "2" and press the key.
- 2) Enter "214" and press the key.
- 3) Press the key.

NOTE: The machine will automatically stop when TD sensor initial setting is completed. (It takes about 2.5 minutes.)

Then perform the "Compulsory toner supply" SP mode as follows:

- 1) Press the key twice.
- 2) Enter "2" and press the key.
- 3) Enter "207" and press the key.
- 4) Press the key.

NOTE: The machine will automatically stop when compulsory toner supply is completed. (It takes about 30 seconds.)

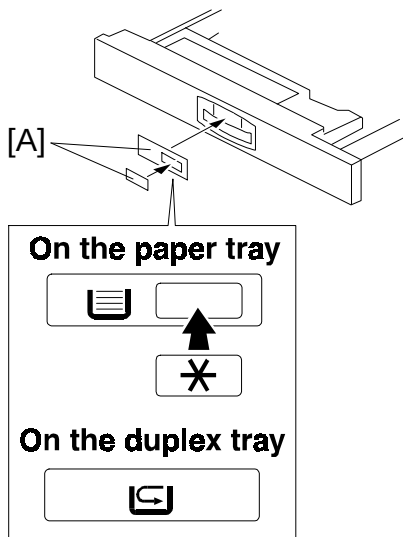
- 5) Compulsory toner supply must be performed twice in order to supply enough toner to the toner hopper, so press the key again.

26. **A207 copier only:**

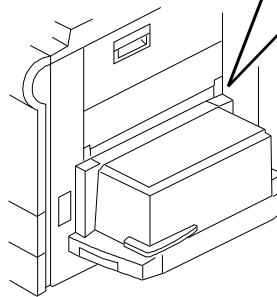
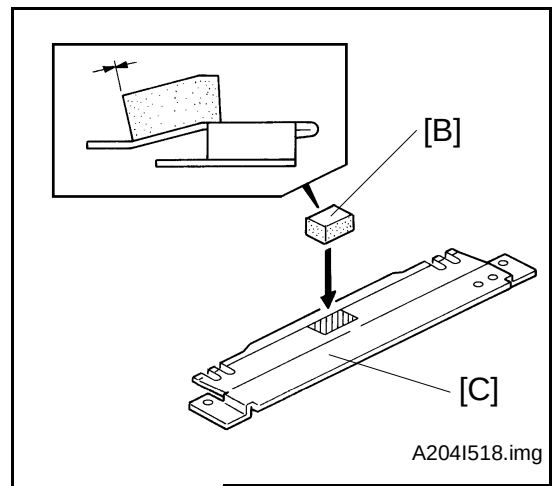
Select the proper language for the guidance display as follows:

- 1) Press the key twice.
- 2) Enter "5" in the 3rd digit of the copy counter and press the key.
- 3) Enter "910" and press the key.
- 4) Enter the number for the desired language in the three-digit indicator and press the key.
 - 1: English 2: French 3: German 4: Italian 5: Spanish 6: Swedish
 - 7: Portuguese 8: Danish 9: Norwegian 10: Finnish 11: Dutch

27. Press the key three times to exit SP mode.

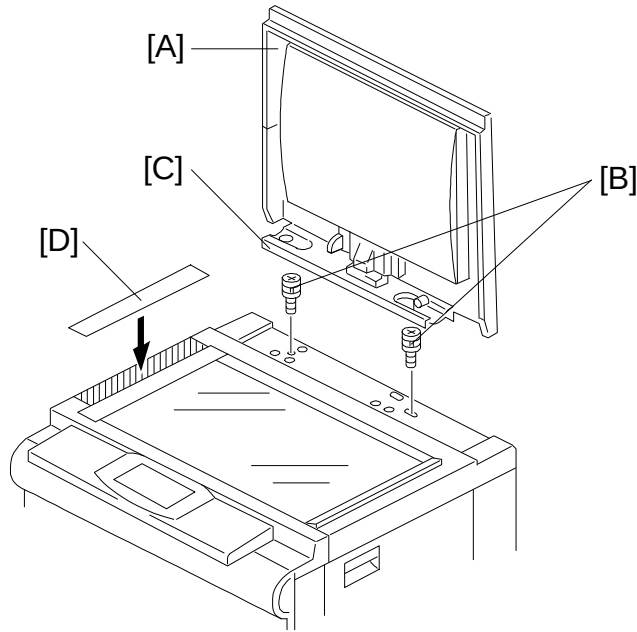


A204I514.wmf



A204I517.wmf

28. Pull out the paper tray and load paper into it. (The paper size and direction for each tray should be as specified by the customer.)
NOTE: The side and rear fences should be properly positioned.
29. Select the appropriate paper size for the paper trays in the main body by sliding the paper size slider into the correct position (see section 2.3.2 in the base copier manual, "Paper size selection for the copier paper trays" for details).
30. **When a paper tray unit is installed:** Enter the proper paper size for each paper tray by following the procedure shown in section 2.3 in the base copier manual, "Paper Size Selection" and in "Service Tables - SP5-019: Paper Size Setting".
31. Load paper into the paper trays and the copy tray.
32. Attach the appropriate paper size decals [A] to the paper trays.
 Also (A207/A211 copiers only), attach the duplex decal to the duplex tray.
NOTE: Paper size decals are used also for the paper tray unit. Save the remaining decals for use with the paper tray unit.
33. Attach the cushion [B] at the center of the LCT upper stay [C] as shown.
NOTE: Make sure that the edge of the cushion is aligned with the line where the stay is bent at a slight angle.



A204I515.wmf

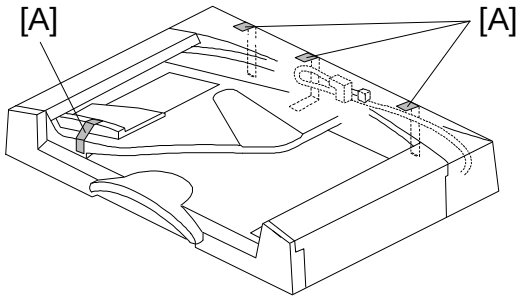
34. Install the optional platen cover [A] as follows if necessary:
- 1) Install 2 stud screws [B] on the top cover as shown.
 - 2) Position the platen cover bracket [C] on the stud screws and slide it to the left.
35. **All models except the A207:** Attach the symbol explanation decal [D] to the top cover as shown. (If the ARDF will be installed, stick the decal on the ARDF exit cover. Refer to the ARDF installation procedure.)
36. Check the copy quality and machine operation.

11.3 AUTO REVERSE DOCUMENT FEEDER (A663)
ACCESSORY CHECK

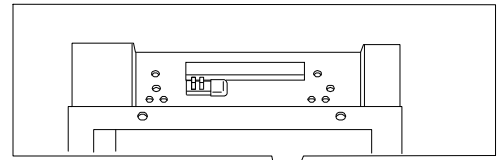
Check the accessories against the following list:

Description	Q'ty
1. New Equipment Condition Report (Multi-language)	1
2. Installation Procedure (English).....	1
3. Stud Screw	2
4. Philips Screw with Flat Washer - M4 x 10	2
5. Sponge Retainer.....	1

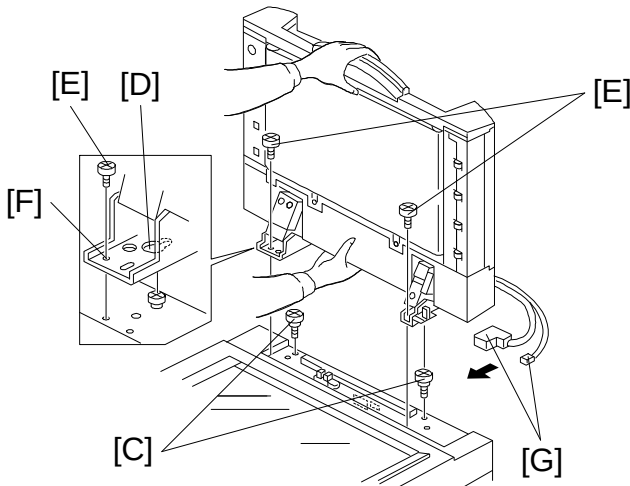
11.4 AUTO REVERSE DOCUMENT FEEDER (A663) INSTALLATION PROCEDURE



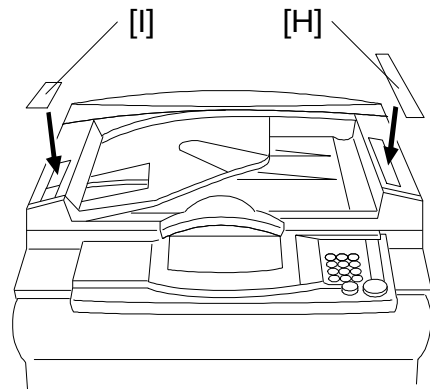
A663I500.wmf



A663I501.wmf



A663I502.wmf



A663I503.wmf

⚠ CAUTION

Unplug the copier power cord before starting the following procedure.

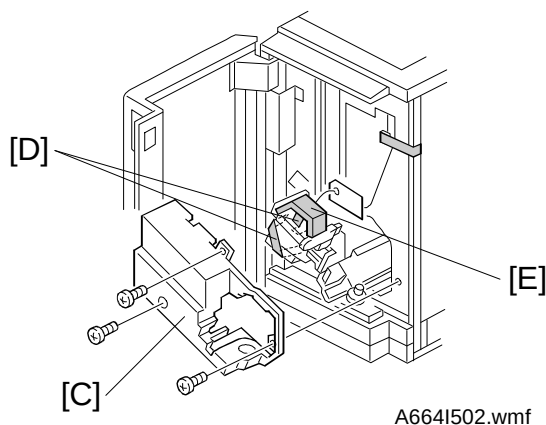
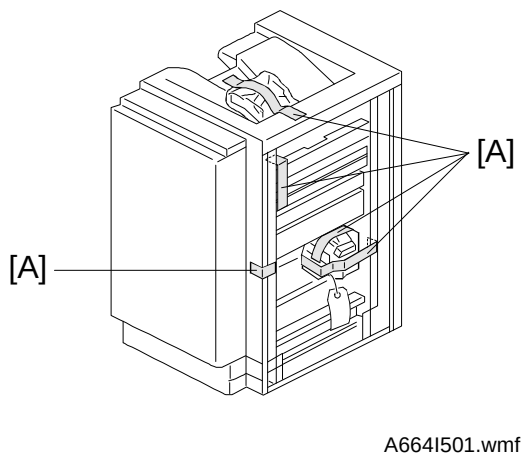
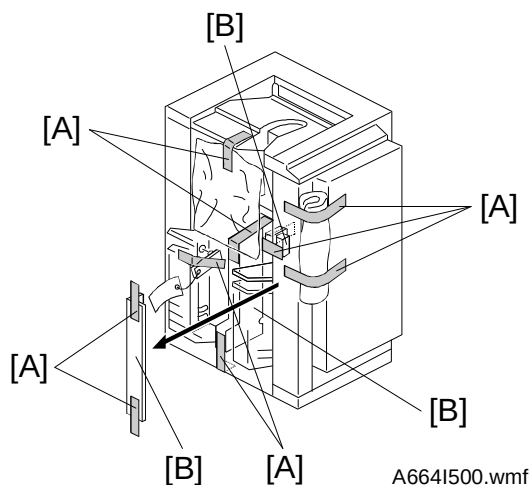
1. Remove the strips of tape [A].
2. Attach the sponge retainer [B] to the top cover of the copier as shown.
3. Tighten the two stud screws [C].
4. Mount the ARDF by aligning the holes [D] in the ARDF and the stud screws [C], then slide the ARDF to the front as shown.
NOTE: When mounting the ARDF, hold it by hand as shown in the illustration. Holding it in another way may damage the ARDF.
5. Screw the two stud screws [E] into the holes [F] and tighten them.
6. Connect the connectors [G] into the socket on the rear of the copier.
7. Attach the symbol explanation decal [H] and the combine originals explanation decal [I] to the ARDF as shown (**except for the A207 copier**).

11.5 20-BIN SORTER STAPLER (A664) ACCESSORY CHECK

Check the accessories against the following list:

Description	Q'ty
1. Front Connection Bracket.....	1
2. Rear Connecting Bracket	1
3. Cushion	2
4. Entrance Guide Mylar for A204/A206/A207 copiers	1
5. Entrance Guide Mylar for A208/A210/A211 copiers	1
6. Proof Tray	1
7. Caster Stopper	2
8. Relay Guide	1
9. Philips Pan Head Screw - M4 x 12.....	4
10. Philips Pan Head Screw - M4 x 6.....	2
11. New Equipment Condition Report (Multi-language).....	1
12. Staple Position Decal	1
13. Installation Procedure (English).....	1

11.6 20-BIN SORTER STAPLER (A664) INSTALLATION PROCEDURE



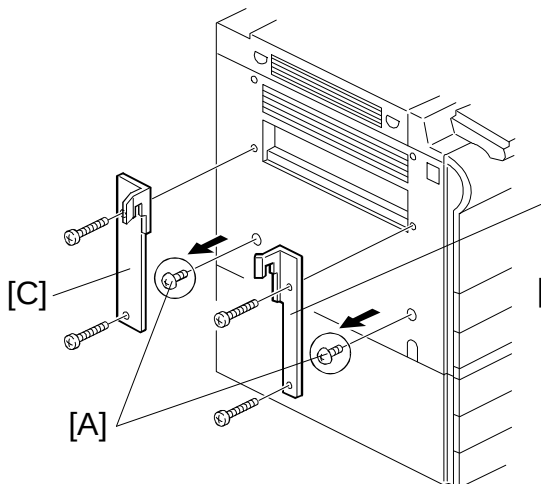
⚠ CAUTION

Unplug the copier power cord before starting the following procedure.

NOTE: 1) Keep the shipping retainers after installing the machine. They will be reused if the machine will be transported to another location.
 2) Proper reinstallation of the shipping retainers is required in order to avoid any transport damage.
 3) A sorter adapter (A568) is required to install this sorter stapler in the A208/A210/A211 copiers. Before installing this sorter stapler, please install the sorter adapter.

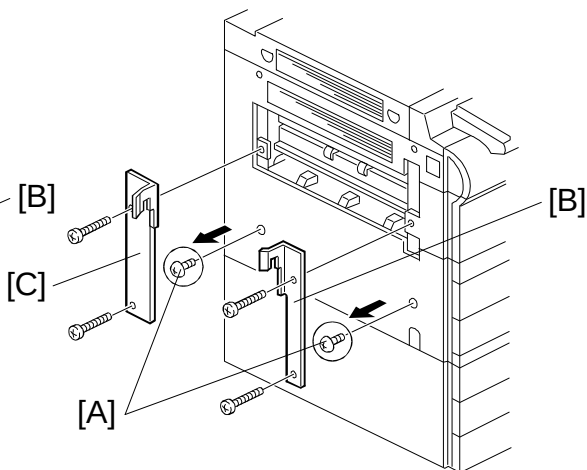
1. Remove the strips of tape [A] and the cushions [B].
2. Open the front door and remove the inner cover [C] (3 screws).
3. Remove the strips of tape [D] and remove the cushion [E]. Then re-install the inner cover [C].

–A204/A206/A207 copiers–



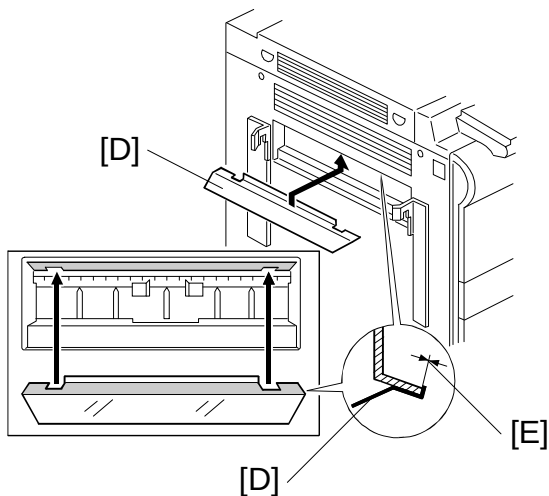
A664I503.wmf

–A208/A210/A211 copiers–



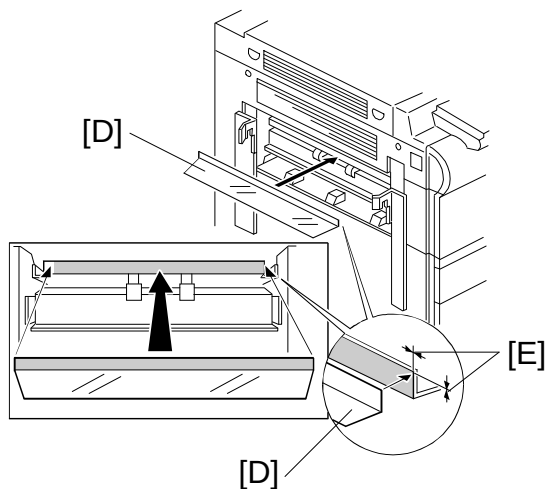
A664I504.wmf

–A204/A206/A207 copiers–



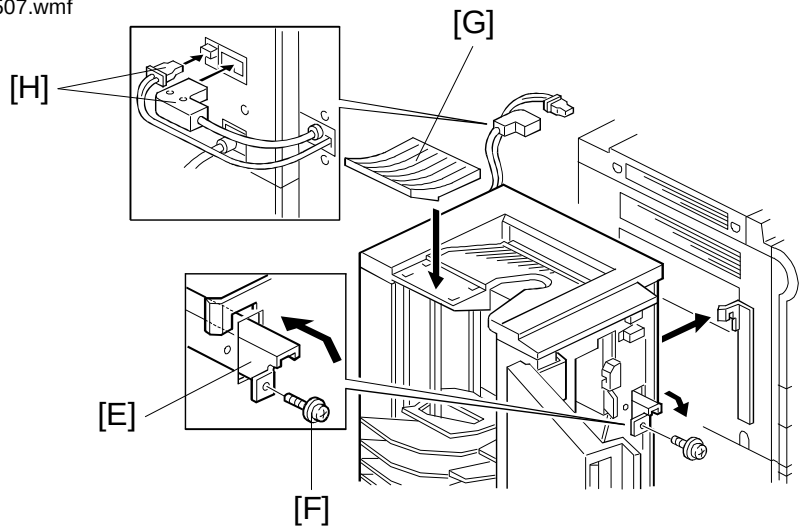
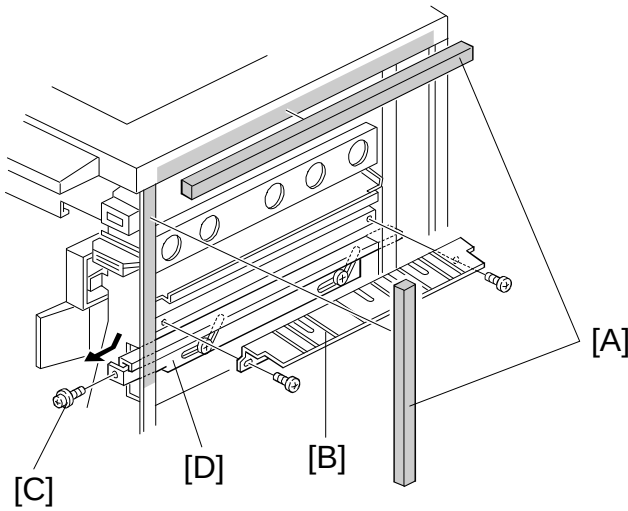
A664I505.wmf

–A208/A210/A211 copiers–

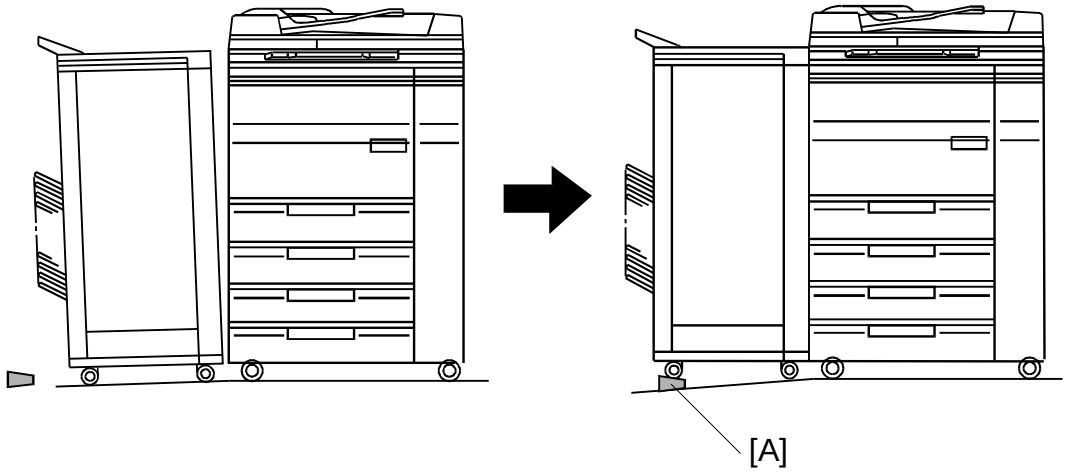


A664I506.wmf

4. Remove the two M4 x 8 round head screws [A] from the left cover of the copier.
5. Install the front connecting bracket [B] (2 screws M4 x 12) and the rear connecting bracket [C] (2 screws M4 x 12) on the copier.
6. Attach the entrance guide mylar [D] to the copier exit area, as shown.
NOTE: 1) The entrance guide mylar differs depending on the model.
 2) Align the edge [E] of the cover and the mylar.



7. Attach the two cushions [A] as shown.
8. Install the relay guide [B] (2 screws M4 x 6).
9. Open the front door of the sorter stapler and remove the screw [C] securing the locking lever [D], then lower the locking lever.
10. Align and press the sorter stapler against the copier and secure them by raising the locking lever [E].
11. Secure the locking lever (1 screw [F]).
12. Install the proof tray [G].
13. Connect the connectors [H] to the sockets at the rear of the copier.



A664I509.wmf

14. If the gap between the top of the sorter stapler and the copier is too great, adjust it by placing caster stoppers [A].
15. Plug in the copier.
16. Turn on the main switch of the copier and test the operation of the sorter stapler.

NOTE: The copier automatically recognizes that the sorter stapler has been installed.

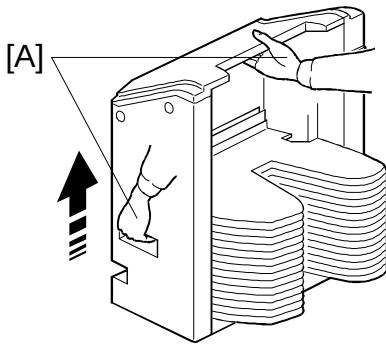
11.7 20-BIN SORTER STAPLER (A658) ACCESSORY CHECK

Check the accessories against the following list:

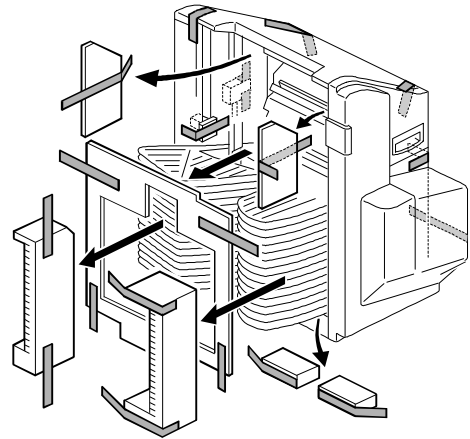
Description	Q'ty
1. Staple Position Decal	1
2. Chain	1
3. Cap Remover	1
4. Philips Pan Head Screw - M4 x 14.....	5
5. New Equipment Condition Report (Multi-language)	1
6. Installation Procedure (English).....	1
7. Stepped Screw	1

Copier

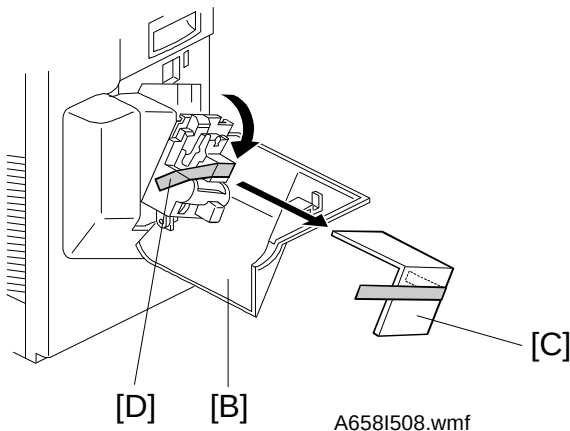
11.8 20-BIN SORTER STAPLER (A658) INSTALLATION PROCEDURE



A658I500.wmf



A658I501.wmf



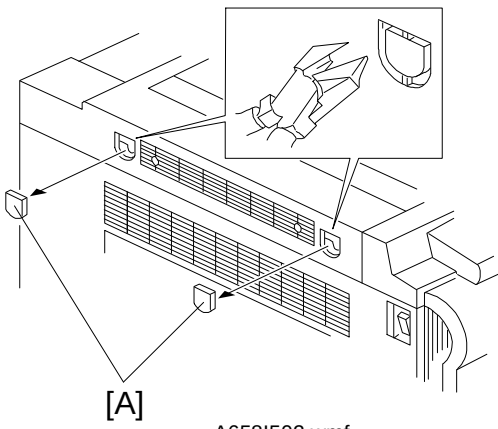
A658I508.wmf

⚠ CAUTION

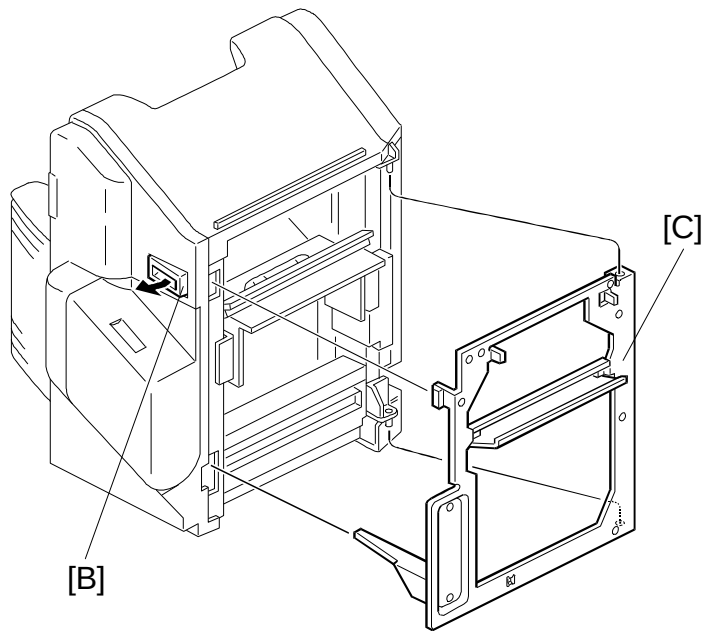
Unplug the copier power cord before starting the following procedure. When handling the sorter stapler, make sure to hold the parts shown [A]. Otherwise, the resulting damage may cause paper jams at the entrance.

NOTE: 1) Keep the shipping retainers after installing the machine. They will be reused if the machine will be transported to another location.
2) Proper reinstallation of the shipping retainers is required in order to avoid any transport damage.
3) A sorter adapter (A568) is required to install this sorter stapler in the A208/A210/A211 copiers. Before installing this sorter stapler, please install the sorter adapter.

1. Remove the strips of tape and the shipping retainers as shown.
2. Open the front door [B] and remove the cardboard [C] and the strip of tape [D] from the staple unit. Close the front door.

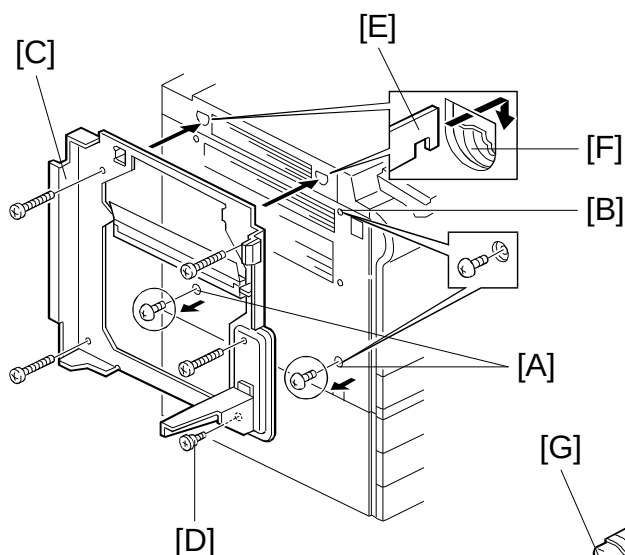


A658I502.wmf

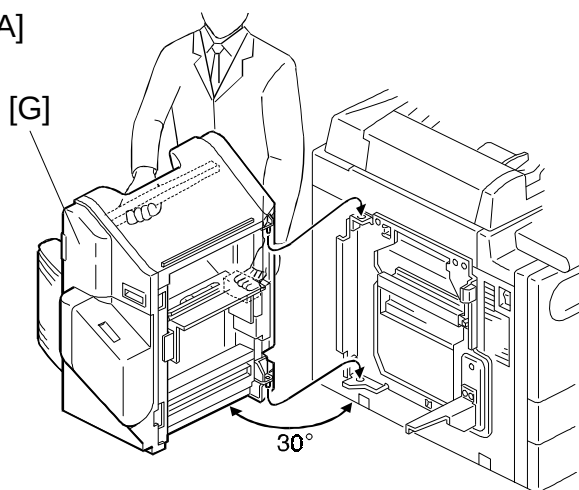


A658I503.wmf

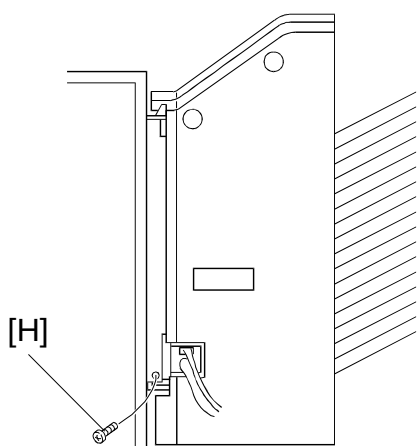
3. Remove the two plastic caps [A] from the copier left cover with nippers.
4. By releasing the open lever [B] of the sorter stapler, remove the sorter stapler mounting frame [C], as shown.



A658I504.wmf



A658I505.wmf



A658I506.wmf

5. Remove the M4 x 8 round head screws (2 screws [A] for the **A204/A206/A207 copiers**, 3 screws [A] and [B] for **A208/A210/A211 copiers**) from the left cover of the copier.

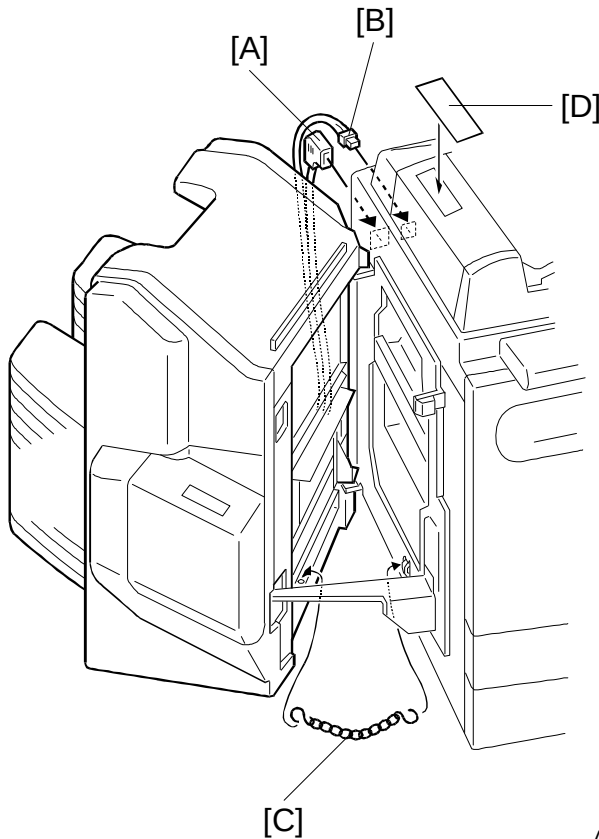
6. Mount the sorter stapler mounting frame [C] on the copier as shown (4 screws M4 x 14 and 1 stepped screw [D]).

NOTE: When hooking the sorter stapler mounting frame on the left side of the copier, make sure that the positioning hooks [E] on the frame are properly inserted in the positioning holes [F] in the copier.

7. Install the sorter stapler [G] on the frame (2 hinge pins at the rear) as shown.

8. Tighten the M4 x 14 screw [H].

NOTE: This screw prevents the sorter stapler from falling down.



A658I507.wmf

9. Connect the cable [A] and the optic cable [B].
10. Install the chain [C] as shown.
11. Attach the staple position decal [D], as shown.
12. Plug in the copier.
13. Turn on the main switch of the copier and test the operation of the sorter stapler.

NOTE: The copier automatically recognizes that the sorter stapler has been installed.

12. SERVICE PROGRAM MODE

12.1 SERVICE PROGRAM MODE TABLE

- 1. Items written in ***bold italic letters*** are newly added service programs.
- 2. Items written in **bold** are modified service programs.
- 3. A "†" after the mode name means that copies can be made while in this SP mode.
- 4. A "‡" after the setting in the "Settings" column means that the actual factory setting for this is written on the data sheet in the front cover.
- 5. A "°" before the mode number means that this mode can be accessed by sales representatives (Ⓢ/Ⓢ → Ⓒ/Ⓢ → Ⓢ/Ⓢ → Ⓢ/Ⓢ).
- 6. A "•" before the mode number means that this mode can be accessed by users using a UP mode (Ⓢ/Ⓢ → Ⓒ/Ⓢ). See "UP Mode/SP Mode Cross Reference Table".
- 7. In the Function column, comments (extra information) are in italics.
- 8. In the Settings column, the default values are printed in bold letters.
- 9. "RDS" means Remote Diagnostic System (not available in these models)
"CSS" means Customer Support System (only available in Japan)
- 10. Type 1 = A204, A206, and A207 copiers
Type 2 = A208, A210, and A211 copiers

12.1.1 Quick Reference

The following is a quick reference list of the SP Modes.

Mode No.	Function
Paper Feed/Paper Transport/Fusing	
1-001	Registration †
1-003-xxx	Paper Feed Timing †
1-008	Misfeed Detection †
1-103	Fusing Idling †
°1-104	Fusing Temperature Control †
1-105-xxx	Fusing Temperature Adjustments †
1-106-xxx	Fusing Temperature Display †
1-108	Forced Start †
1-801	<i>CPM Down Select †</i>
1-902	Jogger Span Adjustment (Side Fence) †
1-905	Jogger Span Adjustment (End Fence) †

Mode No.	Function
Around the Drum	
2-001	Drum Charge Voltage Adjustment (for copying)
2-002-xxx	Drum Charge Voltage Display †
2-003	Drum Charge Voltage Adjustment (for making VSP patterns)
2-101-xxx	Leading/Trailing Edge Erase Margin Adjustment †
2-201-xxx	Development Bias Adjustments †
2-203	Development Bias Adjustment (for making VSP patterns)
2-206-xxx	Development Bias Display †
2-207	Forced Toner Supply (shown as "Compulsory Toner Supply" on the display)
2-208-001	Toner Supply Mode Selection †
2-208-002	Toner Supply Ratio (TD Sensor Supply Mode) †
2-208-003	Toner Supply Ratio (Fixed Supply Mode) †
2-214	TD Sensor Initial Setting
2-215-xxx	TD Sensor Output Display †
2-220	TD Sensor Initial Output Display †
2-222	Toner Supply Ratio (Detect Supply Mode) †
2-301-xxx	Transfer Current Adjustments † Factory Use Only: Do not change the settings.
2-801	Developer Agitation
2-802	Drum Charge Roller Temperature †
2-812	Drum Reverse Rotation Adjustment †
2-901	Drum Charge Roller Cleaning Interval †
2-902	Not used
Process Control	
3-001	ID Sensor Initial Setting
3-002	ID Sensor Initial Setting Display †
3-103-xxx	ID Sensor Output Display †
3-105	Forced VL Detection
3-106	Initial VLP/VLG Display †
3-107	Current VLP/VLG Display †
3-111	Current VRP/VRG Display †
3-112	Forced VR Detection
3-123	Drum Initialize
3-801	Auto Process Control Mode Selection †
3-901	Free Run (Exposure Lamp Off)
3-902	Forced Process Control
Optics	
4-001	Exposure Lamp Voltage Adjustment †
°4-002	Exposure Lamp Voltage Display †
4-008	Vertical Magnification Adjustment †
4-011-xxx	Lens Horizontal HP Adjustments †

Mode No.	Function
4-013	Scanner Free Run
4-101	Horizontal Magnification Adjustment †
4-102	Lens Error Correction †
4-103	Focus Adjustment †
4-201	Auto ADS Gain Adjustment
4-202	ADS Initial Gain Display †
4-203	ADS Actual Gain Display †
4-301	APS Sensor Function Check †
4-302	Optional APS Sensor (LT version only) †
4-303	APS A5/HLT Detection †
4-901	APS Size Priority (for F4 size) †
°4-902	APS 8 k/16 k Detection (A4 versions only) †
Operation	
°°5-001	All Indicators ON †
°°5-002	Feed Station Priority Selection †
°°5-003	APS Priority Selection †
°°5-004	ADS Priority Selection †
°°5-013	Counter Up/Down Selection †
°°5-017	Maximum Copy Quantity (Copy Limit) †
°°5-019-xxx	Paper Size Set †
°°5-021-xxx	Duplex Priority Selection (Energy Star) †
°°5-022-xxx	Energy Star Selection †
°°5-101	Auto Reset Time Setting †
°°5-102	Auto Energy Saver Time Setting †
°°5-103	Auto Tray Shift †
°5-104	A3/DLT Double Count †
°°5-106	Image Density Level Correction (ADS Correction) †
°°5-107-xxx	Image Shift Margin Adjustment †
°°5-108	Edge Erase Margin Adjustment †
°°5-110	Center Erase Margin Adjustment †
°5-113	Coin Lock Installation †
5-115	Duplex Image Shift (Back Side Margin) †
°5-121	T/C (Total Counter) Count Up Timing †
°°5-122-xxx	OHP Slip Sheet Mode Selection †
5-127	APS Detection †
°°5-305-001	Auto Shut Off Time Setting †
°°5-305-002	Auto Shut Off Selection †
°5-401	User Code Mode †
°°5-402	User Code Counter Check †
°°5-404-xxx	User Code Counter Clear †
°°5-405	User Code Number Setting †
°°5-407-xxx	User Code Number Clear †

Mode No.	Function
°5-408	Number of Registered User Codes Display †
°°5-410	User Code Reset Time Setting †
°5-501-001	PM Interval Setting †
°5-501-002	PM Interval Setting (PM Alarm Mode Setting) †
5-504	Used in Japan only. Do not change the factory setting.
5-505	Used in Japan only. Do not change the factory setting.
°5-507	Used in Japan only. Do not change the factory setting.
5-801	Memory All Clear †
5-802-xxx	Free Run Mode
5-803	Input Check Mode †
5-804	Output Check Mode
°5-810	SC Reset †
5-811	Used in Japan only. Do not change the factory setting.
°5-812	Telephone Number Input † (A207 copier only)
°5-816	Used in Japan only. Do not change the factory setting.
5-817	Used in Japan only. Do not change the factory setting.
°5-905	APS A4/LT Sideways Priority †
°°5-906	Manual Staple Reset Time Setting †
°°5-907	Cover Mode Selection †
°°5-908	Image Shift/Erase Selection †
°°5-909	10 key Zoom/Size Magnification †
°°5-910	Guidance Language Setting † (A207 copier only)
Peripherals	
°°6-001	SADF Auto Reset Time Setting †
°6-003	Auto Sort Selection †
°6-005	Blank Copy for Last Odd Originals in Duplex †
6-006-xxx	DF Registration Adjustment †
6-009	DF Free Run with Paper
°°6-010	Auto APS Select (DF) †
°°6-011	Thick/Thin Original Mode Selection †
°6-101	Sorter Installation †
°6-102	Sorter Stack Limit †
°6-104	Staple Sheet Limit †
6-105-xxx	Staple Position Adjustment †
6-107	Sorter Free Run Mode
Counters	
°7-001	Total Operation Time Display †
°7-002	Total Original Counter Display †
°7-003	Copy Charge Counter for RDS/CSS Display † This is for use with features that are available only in Japan. However, it does show how many originals have been copied (total of DF mode + platen mode).

Mode No.	Function
°7-004	Initial Copy Counter Setting for RDS/CSS Display † This is for use with features that are available only in Japan. However, it does show the total number of copies that have been made.
°7-101-xxx	Total Copies by Paper Size †
°7-203	Drum Counter †
°7-204-xxx	Feed Unit Counter †
°7-205	DF Counter †
°7-206	Stapler Counter †
°7-301-xxx	Total Copies by Magnification †
°7-401	Total Service Call Counter †
°7-402	SC Counter by Service Call †
°7-501	Total Jam Counter (Copies + Originals) †
°7-502	Total Jams by Paper Size † (Note: This is actually the Total Copy Paper Jam Counter. The counter is not divided up by Paper Size.)
°7-503	Total Original Jam Counter
°7-504-xxx	Total Jams by Location †
°7-505-xxx	Total Original Jams by Location †
°7-801-xxx	Main ROM Version Display †
°7-803	PM Counter Check †
°7-804	PM Counter Clear
°7-807-001	SC Counter Clear †
°7-807-002	Copy Jam Counter Reset †
°7-807-003	Original Jam Counter Reset †
°7-808	Counter All Clear
°7-810	Copy Counter Clear
°7-811	DF Counter Clear
°7-816-xxx	Feed Unit Counter Clear †

12.1.2 SP Mode Table

Mode No.		Function	Settings
1-001	Registration †	Adjusts leading edge registration. <i>(0.5 mm per step [Range: –8.0 mm to +8.0 mm])</i>	0 ~ 32 Default = 16 ±
1-003-001 to 1-003-008	Paper Feed Timing †	Adjusts the paper feed timing at registration for each paper feed station. Paper feed timing is in proportion to the amount of paper bending [mm] at registration. <i>(0.5 mm per step [Range: –8 mm to + 8 mm])</i>	0 ~ 32 Default = 16 SP1-003-008: Do not adjust this setting.
1-008	Misfeed Detection †	Switches misfeed detection on or off for test purposes (sensor signals are ignored). Only one copy can be made at a time, to prevent damage to the machine.	0: OFF 1: ON
1-103	Fusing Idling †	Selects the total time for the fusing idling during machine warm-up. For type 2, fusing idling starts when the detected temperature reaches the operating temperature –15°C. For type 1, fusing idling starts when the detected temperature reaches the operating temperature. <i>The longer the selected fusing idling, the longer time the machine takes to reach the ready condition. After changing the setting, turn the main switch off and on.</i>	0: OFF 1: 60 s 2: 100 s 3: 180 s 4: 300 s Default = 100 s (Type 1) Default = Off (Type 2)
°1-104	Fusing Temperature Control †	Selects the fusing lamp temperature control mode. <i>After selecting the control mode, turn the main switch off and on.</i>	0: On/Off Control 1: Phase Control

Mode No.		Function	Settings							
1-105-001	Fusing Temperature Adjustment (Main Fusing Lamp) †	Adjusts the temperature of the main fusing lamp, which heats the central area of the hot roller. The selected temperature is displayed in the reduce/enlarge indicator. <i>(1°C per step [Range: 170°C to 190°C])</i>	170 ~ 190 Default = 185 (Type 1) Default = 180 (Type 2)							
		Adjusts the temperature of the fusing unit in energy saver mode. (SP5-102 and SP5-305 are also related to Energy Saver Mode.) <table border="1"><thead><tr><th>SP Setting</th><th>Type 1</th><th>Type 2</th></tr></thead><tbody><tr><td>0</td><td>185°C</td><td>175°C</td></tr><tr><td>1</td><td>170°C</td><td>145°C</td></tr></tbody></table> The lower the fusing temperature is, the greater the energy saving ratio is and the longer the waiting time until the copier returns to the ready condition.	SP Setting	Type 1	Type 2	0	185°C	175°C	1	170°C
SP Setting	Type 1	Type 2								
0	185°C	175°C								
1	170°C	145°C								
1-105-002	Fusing Temperature Adjustment for Energy Saver Mode †									
1-105-003 (Type 2 only)	Fusing Temperature Adjustment (Secondary Fusing Lamp) †	Adjusts the temperature of the secondary fusing lamp, which heats both ends of the hot roller. <i>(1°C per step [Range: 170°C to 190°C])</i>	170 ~ 190 Default = 175							
1-106-001	Fusing Temperature Display (Main Fusing Lamp) †	Displays the temperature (°C) at the surface of the central area of the hot roller, as measured by the thermistor. <i>The temperature in energy saving mode cannot be displayed, as entering SP mode takes the machine out of this mode.</i>								
1-106-002 (Type 2 only)	Fusing Temperature Display (Secondary Fusing Lamp) †	Displays the temperature (°C) at the surface of the ends of the hot roller, as measured by the thermistor. <i>The temperature in energy saving mode cannot be displayed, as entering SP mode takes the machine out of this mode.</i>								
1-108	Forced Start †	Selects whether forced start is on or off. <i>If forced start is switched on, the copier enters the ready condition even if the fusing temperature has not reached the required value yet. Use this for tests if the room temperature is low and you do not wish to wait for the lamps to warm up.</i>	0: OFF 1: ON							

Mode No.		Function	Settings
1-801	CPM Down Select † (Type 1 only)	If this is set to 1 or 2, the machine drops the cpm to the same as the Type 2 model if it detects a temperature lower than the setting. This allows the roller to warm up again, to prevent poor fusing.	0: OFF 1: 160 °C 2: 170 °C
		<i>This feature may be needed in areas where the mains voltage is a bit lower than the rating (for example, in areas of Europe where the mains is 210 V, instead of 220 - 240 V).</i>	
1-902	Jogger Span Adjustment (Side Fence) †	Adjusts the stop position of the jogger side fence span of the duplex unit.	0 ~ 32 Default = 16
		<i>(0.5 mm per step [Range: -8.0 mm to +8.0 mm]) A207 and A211 copiers only</i>	
1-905	Jogger Span Adjustment (End Fence) †	Adjusts the stop position of the jogger end fence span of the duplex unit.	0 ~ 32 Default = 16
		<i>(0.5 mm per step [Range: -8.0 mm to +8.0 mm]) A207 and A211 copiers only</i>	
2-001	Drum Charge Voltage Adjustment (for copying) †	Adjusts the voltage applied to the drum charge roller during copying.	0 - 32 Default = 16 (0 V) ‡
		<i>The adjustment factor set with this SP mode is added to the base voltage. (30 V per step [Range: Base voltage -480 V to Base voltage + 480 V])</i>	
2-002-001 to 2-002-002	Drum Charge Voltage Display †	Displays the voltage applied to the drum charge roller. SP2-002-001: For copying SP2-002-002: For making VSP patterns	
		<i>The first three digits are displayed in the reduce/enlarge indicator. The actual value is the displayed value x (-10) V. Just after the main switch is turned on, the initial setting voltage is displayed. After one or more copies, the actual applied voltage (including the process control corrections) is displayed.</i>	
2-003	Drum Charge Voltage Adjustment (for making VSP patterns) †	Adjusts the voltage applied to the drum charge roller when making VSP patterns.	0 - 32 Default = 16 (0 V) ‡
		<i>The adjustment factor set with this SP mode is added to the base voltage. (10 V per step [Range: Base voltage -160 V to Base voltage + 160 V])</i>	

Mode No.		Function	Settings
2-101-001 to 2-101-002	Leading/Trailing Edge Erase Margin Adjustment †	Adjusts the leading and trailing edge erase margins. SP2-101-001: Leading edge erase margin SP2-101-002: Trailing edge erase margin (0.5 mm per step [Range: 0.0 mm to +16.0 mm])	0 - 32 Default = 16 (SP 2-101-001) Default = 18 (SP-101-002) ‡ (only 2-101-001 is on the data sheet)
2-201-001	Development Bias Adjustment (for copying) †	Adjusts the development bias for copying to make copies lighter or darker in general. <i>The adjustment factor set with this SP mode is applied to the base voltage. (20 V per step [Range: Base voltage –80 V to Base voltage +80 V])</i>	1 - 9 Default = 5 (0 V) 1: Darkest 9: Lightest
2-201-002	Lightest ID Level Development Bias Adjustment †	Adjusts the development bias for manual ID level 7. <i>The adjustment factor set with this SP mode is applied to the base voltage when ID level 7 is selected.</i>	1: –40 V 2: ±0 V 3: –80 V 4: –120 V
2-203	Development Bias Adjustment (for making VSP patterns) †	Adjusts the development bias for making VSP patterns <i>The adjustment factor set with this SP mode is added to the base voltage. (20 V per step [Range: Base voltage –80 V to Base voltage + 100 V])</i>	1 - 10 Default = 6 (0 V)
2-206-001 to 2-206-002	Development Bias Display †	Displays the development bias. SP2-206-001: Development bias used for copying. SP2-206-002: Development bias used for making VSP sensor patterns. <i>The first two digits are displayed in the reduce/enlarge indicator. The actual value is: displayed value x (–10) V. All process control corrections are included in the displayed value.</i>	
2-207	Forced Toner Supply (shown as "Compulsory Toner Supply" on the display)	Forces the toner bottle to supply toner to the toner supply unit for 30 seconds. <i>This mode is started by pressing the  key and stops automatically after about 30 seconds. Press the  key to interrupt if necessary. This SP mode must be performed twice when installing the machine and when installing a new toner supply unit.</i>	

Mode No.		Function	Settings
2-208-001	Toner Supply Mode Selection †	Selects the toner supply mode. In many cases, the machine will change the toner supply mode automatically if either the TD or ID sensor become unreliable. However, sometimes it does not. If the TD sensor fails, you can select fixed supply mode as a temporary measure. If the ID sensor fails, you can select TD sensor supply mode. After repairing the machine, check whether the toner supply mode has gone back to the detect supply mode.	1: TD sensor supply mode 2: Fixed supply mode 3: Detect supply mode
2-208-002	Toner Supply Ratio (TD Sensor Supply Mode) †	Selects the toner supply ratio for TD sensor supply mode. For example, if the user normally makes copies of originals that are about 7% black, select the 7% setting for best results.	1: 7% 2: 15% 3: 30% 4: 60%
2-208-003	Toner Supply Ratio (Fixed Supply Mode) †	Selects the toner supply ratio for Fixed Supply Mode. For example, if the user normally makes copies of originals that are about 6% black, select the 6% setting for best results.	1: 3% 2: 6% 3: 10% 4: 15%
2-214	TD Sensor Initial Setting	Performs the TD sensor initial setting. This SP mode controls the voltage applied to the TD sensor to make the TD sensor output 2.5 ± 0.1 V. After using SP2-214, check SP2-220 to see if the sensor is working correctly. <i>This mode is started by pressing the  key and stops automatically after about 2.5 minutes. Use this mode only after adding new developer.</i>	
2-215-001 to 2-215-002	TD Sensor Output Display †	Displays the TD sensor output voltage. SP2-215-001: V_T = Current TD sensor output SP2-215-002: V_{TREF} = Reference TD sensor output	
2-220	TD Sensor Initial Output Display †	Displays the TD sensor initial setting output (after doing SP2-214). <i>Normally, 2.5 ± 0.1 V is displayed. [Range: 0 V to 5.0 V]</i> <i>If it is not, the sensor may be defective.</i>	

Mode No.		Function	Settings
2-222	Toner Supply Ratio (Detect Supply Mode) †	Selects the toner supply ratio for detect supply mode. For example, if the user normally makes copies of originals that are about 7% black, select the 7% setting for best results.	1: 7% 2: 15% 3: 30% 4: 60%
2-301-001 to 2-301-002	Transfer Current Adjustments † Factory Use Only: Do not change the settings.		0 ~ 32 15 (–35 μA): Type 1 14 (–30 μA): Type 2
2-801	Developer Agitation	After the  key is pressed, the developer is agitated. To stop, press the  key.	
		<i>Use this SP mode if the machine has not been used for a long time.</i>	
2-802	Drum Charge Roller Temperature †	Displays the drum charge roller temperature [0 ~ 60°C].	
2-812	Drum Reverse Rotation Adjustment †	Adjusts the amount of the time for the drum reverse rotation after each copy job.	0 ~ 32 Default = 16 (about 3 mm)
		<i>If paper dust remains on the drum, it may get into the recycled toner. If this is happening, increase the reverse rotation by increasing the value of the setting.</i>	
2-901	Drum Charge Roller Cleaning Interval †	Selects the drum charge roller cleaning interval. Turn the copier main switch off and on after changing the setting.	0: Every 1,000 copies 1: Every 500 copies 2: Every 200 copies 3: Every 100 copies
		<i>The drum charge roller is cleaned briefly at the end of each copy job. The drum charge roller is also cleaned for 5 seconds after the interval selected with this SP mode.</i>	
2-902	Do not use	—	
3-001	ID Sensor Initial Setting	Performs the ID sensor initial setting. ID sensor output for the bare area of the drum (VSG) is adjusted to 4.0 ± 0.2 V.	
		<i>To start this SP mode, press the  key.</i>	
3-002	ID Sensor Initial Setting Display †	Displays the initial setting value of the ID sensor.	
		<i>Normally 4.0 ± 0.2 V is displayed. If the ID sensor cannot be adjusted to 4.0 ± 0.2 V, the ID sensor or the OPC drum should be cleaned.</i>	

Mode No.		Function	Settings			
3-103-001 to 3-103-002	ID Sensor Output Display †	Displays the ID sensor outputs. SP3-103-001: VSP SP3-103-002: VSG				
		<i>Normally, $V_{SP} = 0.01 \sim 2.50 \text{ V}$, $V_{SG} = 4.0 \pm 0.2 \text{ V}$ ($V_{SP}/V_{SG} \approx 0.1$)</i>				
3-105	Forced VL Detection	After the  key is pressed, the initial VLP/VLG (= VREF) is determined.				
		<i>For when to use this SP mode, see "Practical SP Mode Use Table".</i>				
3-106	Initial VLP/VLG Display †	Displays the initial VLP/VLG value determined by SP3-105.				
3-107	Current VLP/VLG Display †	Displays the current VLP/VLG value [%].				
		<i>This is the value currently being used for VL correction.</i>				
3-111	Current VRP/VRG Display †	Displays the current VRP/VRG value [%]				
		<i>This is the value currently being used for VR correction.</i>				
	VRP/VRG x 100 (%)	ID Correction			Drum Charge Roller Correction Voltage	Development Bias Correction Voltage
		±0 V	−40 V	−80 V		
		74 ~ 100	68 ~ 100	62 ~ 100	±0 V	±0 V
		53 ~ 73	50 ~ 67	43 ~ 61	−40 V	−40 V
		41 ~ 52	37 ~ 49	26 ~ 42	−80 V	−80 V
		31 ~ 40	26 ~ 36	19 ~ 25	−120 V	−120 V
	0 ~ 30	0 ~ 25	0 ~ 18	−160 V	−160 V	
3-112	Forced VR Detection	After the  key is pressed, forced VR detection is done.				
		<i>For when to use this SP mode, see "Practical SP Mode Use Table".</i>				
3-123	Drum Initialize	This resets the following data regarding the OPC drum: 1. VR correction level 2. VL correction level 3. OPC counter 4. T/H correction level				
		<i>This SP mode must be used only when a new drum is installed. Refer to "Practical SP Mode Use Table" for the exact timing for using this SP mode.</i>				

Mode No.		Function	Settings
3-801	Auto Process Control Mode Selection †	Selects whether auto process control mode is off or performed at the interval shown. If the auto process control mode is switched off, VR correction, VL correction, and the 1,000-copy process control cycle will not be performed.	0: OFF 1: 1,000 copies 2: 500 copies 3: 200 copies
		<i>This SP mode can be used to help determine whether a copy quality problem is caused by process control or by the machine itself.</i>	
3-901	Free Run (Exposure Lamp Off)	Performs a free run with the exposure lamp off.	
		Start the free run by pressing the  key and stop it by pressing the  key. Be sure to perform this mode without a development unit, or too much toner will be consumed from the developer, causing low image density.	
3-902	Forced Process Control	Performs the 1,000-copy process control cycles forcibly. VSG initial adjustment → VR detection → VL detection → VADS (pattern) adjustment	
		<i>This mode starts after the  key is pressed.</i>	
4-001	Exposure Lamp Voltage Adjustment †	Adjusts the exposure lamp voltage (0.5 V per step [Range: 50.0 V to 75.0 V])	50.0 ~ 75.0 V Default = 63 V ‡
		<i>For 115 V machines, the actual applied voltage = displayed value x 1.1412. After doing this SP mode, ADS initial setting (SP4-201) and forced VL detection (SP3-105) must also be done. See "Replacement and Adjustment - Copy Quality Adjustments" for how to adjust.</i>	
°4-002	Exposure Lamp Voltage Display †	Displays the current exposure lamp voltage. (0.5 V per step [Range: 50.0 V to 85.0 V])	50.0 ~ 85.0 V
		<i>For 115 V machines, the actual applied voltage = displayed value x 1.1412.</i>	
4-008	Vertical Magnification Adjustment †	Adjusts the magnification in the paper travel direction. (0.1% per step [Range: -1.6% to +1.6%]) See "Replacement and Adjustment - Copy Quality Adjustments" for how to adjust.	0 ~ 32 V Default = 16 ‡

Mode No.		Function	Settings																														
4-011-001 to 4-011-009	Lens Horizontal HP Adjustment †	Adjusts the lens horizontal home position for each paper feed station. (0.2 mm per step [Range: −3.2 mm to +3.2 mm])	0 ~ 32 V Default = 16 ± (only 4-011-008 is on the data sheet)																														
		<table><tr><th>SP Number</th><th>Without Duplex</th><th>With Duplex</th></tr><tr><td>4-011-001</td><td>1st tray</td><td>Duplex</td></tr><tr><td>4-011-002</td><td>2nd tray</td><td>1st tray</td></tr><tr><td>4-011-003</td><td>3rd tray</td><td>2nd tray</td></tr><tr><td>4-011-004</td><td>4th tray</td><td>3rd tray</td></tr><tr><td>4-011-005</td><td>5th tray</td><td>4th tray</td></tr><tr><td>4-011-006</td><td>By-pass</td><td>By-pass</td></tr><tr><td>4-011-007</td><td>LCT</td><td>LCT</td></tr><tr><td>4-011-008</td><td colspan="2">Base Adjustment</td></tr><tr><td>4-011-009</td><td>ADF</td><td>ADF</td></tr></table>		SP Number	Without Duplex	With Duplex	4-011-001	1st tray	Duplex	4-011-002	2nd tray	1st tray	4-011-003	3rd tray	2nd tray	4-011-004	4th tray	3rd tray	4-011-005	5th tray	4th tray	4-011-006	By-pass	By-pass	4-011-007	LCT	LCT	4-011-008	Base Adjustment		4-011-009	ADF	ADF
		SP Number		Without Duplex	With Duplex																												
		4-011-001		1st tray	Duplex																												
		4-011-002		2nd tray	1st tray																												
		4-011-003		3rd tray	2nd tray																												
		4-011-004		4th tray	3rd tray																												
		4-011-005		5th tray	4th tray																												
		4-011-006		By-pass	By-pass																												
		4-011-007		LCT	LCT																												
4-011-008	Base Adjustment																																
4-011-009	ADF	ADF																															
<i>SP4-011-008 changes the home position for all paper feed stations at the same time. It is mainly used for making factory adjustments. If it is shifted by a certain amount, all other SP4-011 adjustments move by the same amount. See "Replacement and Adjustment - Copy Quality Adjustments" , and "Side-to-side Registration" in the ARDF manual for details on how to adjust.</i>																																	
4-013	Scanner Free Run	Starts the scanner free run. <i>Start the scanner free run by pressing the  key, and stop it by pressing the  key.</i>																															
4-101	Horizontal Magnification Adjustment †	Adjusts the magnification perpendicular to the direction of paper travel. (0.1% per step [Range: −1.6% to +1.6%]) See "Replacement and Adjustment - Copy Quality Adjustments" for how to adjust.	0 ~ 32 Default =16 ±																														
4-102	Lens Error Correction †	Adjusts the lens position to correct for magnification in enlarge/reduce mode. (0.1% per step [Range: −0.8% to +0.8%])	0 ~ 16 Default = 8 (0%) ±																														
4-103	Focus Adjustment †	Adjusts the 3rd mirror position to correct the fine focus. (0.05 mm per step [Range: left 3.75 mm to right 3.75 mm]) See "Replacement and Adjustment - Copy Quality Adjustments" for how to adjust.	30 ~ 150 Default = 75 ±																														

Mode No.		Function	Settings											
4-201	Auto ADS Gain Adjustment	Adjusts the ADS gain automatically to make the sensor output 2.7 ± 0.1 V.												
		Close the platen cover to prevent external light from reaching the ADS sensor. Then press the  key to make the adjustment.												
4-202	ADS Initial Gain Display †	Displays the ADS sensor output adjusted by SP4-201.												
4-203	ADS Actual Gain Display †	Displays the current ADS sensor output.												
4-301	APS Sensor Function Check †	Check the APS sensors. If they are working correctly, the following value is displayed in the reduce/enlarge indicator.	LT version: 0 or 95 (without optional APS) 0 or 127 (with optional APS) A4 version: 0 or 95											
		<table><tr><th rowspan="2"></th><th colspan="2">LT Version</th><th rowspan="2">A4 Version</th></tr><tr><th>Without optional APS</th><th>With optional APS</th></tr><tr><td>ADF/Platen Open</td><td>0</td><td>0</td><td>0</td></tr><tr><td>ADF/Platen Closed</td><td>95</td><td>127</td><td>95</td></tr></table>			LT Version		A4 Version	Without optional APS	With optional APS	ADF/Platen Open	0	0	0	ADF/Platen Closed
	LT Version		A4 Version											
	Without optional APS	With optional APS												
ADF/Platen Open	0	0	0											
ADF/Platen Closed	95	127	95											
4-302	Optional APS Sensor † (LT version only)	Set this to 1 when installing the optional APS sensor.	0: Not installed 1: Installed											
		<i>This SP mode is effective only for the LT version. In the A4 version, even if "1" is selected, the setting is ignored.</i>												
4-303	APS A5/HLT Detection †	Selects whether A5/HLT forced detection is done or not.	0: NO 1: YES											
		<i>If "YES" is selected, paper sizes that cannot be detected by the APS sensors are regarded as A5 lengthwise (for A4 models) or 5 1/2" x 8 1/2" (for LT models). If "NO" is selected, "Check Paper Size" will be displayed.</i>												
4-901	APS Size Priority (for F4 size) †	Selects which copy paper size the machine selects when the APS sensors detect F4 lengthwise (8 1/2" x 13").	0: 8 1/2" x 13" 1: 8" x 13" 2: 8 1/4" x 13"											

Mode No.		Function	Settings																		
•°4-902	APS 8 k/16 k Detection † (A4 versions only)	Selects whether the machine can select 8 k/16 k copy paper based on APS sensor readings. If "YES" is selected, 8 k/16 k copy paper is selected under the following conditions:	0: NO 1: YES																		
		<table><tr><th>Size detected by APS</th><th>Selected copy paper size</th></tr><tr><td>B4 lengthwise</td><td>8 k lengthwise (267 mm x 390 mm)</td></tr><tr><td>A4 lengthwise</td><td>16 k lengthwise (267 mm x 195 mm)</td></tr><tr><td>B5 sideways</td><td>16 k sideways (115 mm x 267 mm)</td></tr></table>		Size detected by APS	Selected copy paper size	B4 lengthwise	8 k lengthwise (267 mm x 390 mm)	A4 lengthwise	16 k lengthwise (267 mm x 195 mm)	B5 sideways	16 k sideways (115 mm x 267 mm)										
		Size detected by APS		Selected copy paper size																	
		B4 lengthwise		8 k lengthwise (267 mm x 390 mm)																	
A4 lengthwise	16 k lengthwise (267 mm x 195 mm)																				
B5 sideways	16 k sideways (115 mm x 267 mm)																				
<i>If "YES" is selected, the duplex end fence must be removed to allow the 8 k/ 16 k movement of the jogger fences.</i>																					
•°5-001	All Indicators ON †	Turns on all indicators on the operation panel for 10 seconds. It can be manually turned off by pressing the  key.																			
•°5-002	Feed Station Priority Selection †	Selects the paper feed station priority.	1 ~ 6: Non duplex machines 1 ~ 5: Duplex machines Default = 1 (without LCT) Default = LCT (5 or 6) (with LCT)																		
		<table><tr><th>Setting</th><th>Non duplex machines</th><th>Duplex machines</th></tr><tr><td>1</td><td>1st Tray</td><td>1st Tray</td></tr><tr><td>2</td><td>2nd Tray</td><td>2nd Tray</td></tr><tr><td>3</td><td>3rd Tray</td><td>3rd Tray</td></tr><tr><td>4</td><td>4th Tray</td><td>4th Tray</td></tr><tr><td>5</td><td>5th Tray</td><td>LCT</td></tr><tr><td>6</td><td>LCT</td><td>—</td></tr></table>		Setting	Non duplex machines	Duplex machines	1	1st Tray	1st Tray	2	2nd Tray	2nd Tray	3	3rd Tray	3rd Tray	4	4th Tray	4th Tray	5	5th Tray	LCT
Setting	Non duplex machines	Duplex machines																			
1	1st Tray	1st Tray																			
2	2nd Tray	2nd Tray																			
3	3rd Tray	3rd Tray																			
4	4th Tray	4th Tray																			
5	5th Tray	LCT																			
6	LCT	—																			
•°5-003	APS Priority Selection †	Specifies whether the copier defaults to APS or manual mode when the main switch is turned on, auto reset, or mode cleared.	1: APS 2: Manual Also see SP6-010.																		
•°5-004	ADS Priority Selection †	Specifies whether the copier defaults to ADS or manual ID mode when the main switch is turned on, auto reset, or mode cleared.	1: ADS 2: Manual																		
•°5-013	Counter Up/Down Selection †	Selects whether the counter counts up or down.	1: Up 2: Down																		
•°5-017	Maximum Copy Quantity (Copy Limit) †	Limits the maximum copy quantity that can be entered.	1 ~ 999 Default = 999																		

Mode No.		Function	Settings
•°5-019-001 to 5-019-008	Paper Size Set †	Sets the paper size for each paper tray and feed station.	For how to input the settings, see section 2.7.
•°5-021	Duplex Priority Selection (Energy Star) †	Specifies whether the copier defaults to duplex or single sided copies mode.	1: Duplex 2: Single side Default = 1 (NA) Default = 2 (Others)
°5-022	Energy Star Selection †	Specifies whether the copier performs the modes which are related to the Energy Star Standardization.	0: NO 1: YES Default = 1 (NA) Default = 0 (Others)
		The following SP modes are changed automatically when this setting is changed. • SP1-105-002 • SP5-021 • SP5-102 • SP5-305-001 • SP5-305-002	
•°5-101	Auto Reset Time Setting †	Inputs the auto reset time after the copier enters standby, or disables auto reset. <i>(1 second per step [Range: 1 ~ 999]) If "0" is selected, auto reset is disabled.</i>	0 ~ 999 Default = 60
•°5-102	Auto Energy Saver Time Setting †	Sets the time that the machine enters energy saver mode after entering the ready condition.	NA version 1 ~ 120 Default = 15 Other versions 0 ~ 120 Default = 1
		<i>(1 minute per step) If "0" is selected, the energy saver mode is disabled (except for NA version).</i>	
•°5-103	Auto Tray Shift †	Selects whether auto tray shift is on or off.	0: OFF 1: ON
°5-104	A3/DLT Double Count †	Specifies whether the counter is doubled for A3/DLT paper.	0: OFF 1: ON
		<i>If "ON" is selected, the total counter and the current user code counter counts up twice when A3/DLT copy paper is used.</i>	
•°5-106	Image Density Level Correction (ADS Correction) †	Selects the image density level correction.	0: Darkest 1: Darker 2: Normal 3: Lighter 4: Lightest
		<i>The development bias voltage correction in ADS mode depends on this setting (see "ADS Correction" in the Process Control section for details).</i>	



Mode No.		Function	Settings
•°5-107-001 to 5-107-004	Image Shift Margin Adjustment †	This controls the left and right margin width adjustment for both 1st and 2nd side copies. SP5-107-001: Left Margin (1st side) SP5-107-002: Right Margin (1st side) SP5-107-003: Left Margin (2nd side) SP5-107-004: Right Margin (2nd side)	A4 version 0 ~ 15 Default = 5 LT version 0 ~ 0.60 Default = 0.20
		<i>SP5-908 must be at 2 for this to have any effect; this changes the function of the Erase key to a Margin Adjustment key.</i> <i>A4 version: 1 mm per step</i> <i>[Range: 0 mm to 15 mm]</i> <i>LT version: 0.01" per step</i> <i>[Range: 0" to 0.60"]</i>	
•°5-108	Edge Erase Margin Adjustment †	Adjusts the edge erase margin width in erase edge mode.	A4 version 1: 5 mm 2: 10 mm LT version 1: 0.20" 2: 0.40"
		<i>SP5-908 must be at 1 for this to have any effect. A strip of the selected width will be erased around the edges of the copy image.</i>	
•°5-110	Center Erase Margin Adjustment †	Adjusts the center erase margin width in erase center mode.	A4 version 8 ~ 25 Default = 20 LT version 0.32 ~ 1.00 Default = 0.80
		<i>SP5-908 must be at 1 for this to have any effect.</i> <i>A4 version: 1 mm per step</i> <i>Range: 8 mm to 25 mm]</i> <i>LT version: 0.01" per step</i> <i>[Range: 0.32" ~ 1.00"]</i>	
°5-113	Coin Lock Installation †	Specifies whether coin lock is installed or not (only for Japanese versions).	0: Not installed 1: Installed
5-115	Duplex Image Shift † (Back Side Margin)	Specifies whether duplex image shift (back side margin) is used or not.	0: NO 1: YES
		<i>If "YES" is selected, a 5 mm margin is made on the right of the reverse side of copies when making two-sided copies from one-sided originals.</i> <i>If the image shift mode has been selected with SP5-908 and if the user uses image shift mode, this SP mode has no effect.</i>	
°5-121	T/C (Total Counter) Count Up Timing †	Determines whether the total counter counts up at paper feed or at paper exit.	0: Feed 1: Exit
•°5-122	OHP Slip Sheet Mode Selection †	Selects whether to have a image on the OHP slip sheet or not.	0: Blank 1: Image
5-127	APS Detection †	Selects whether APS detection is done or not.	0: NO 1: YES



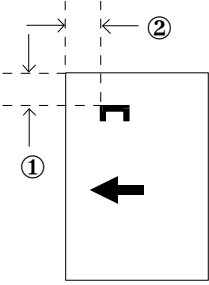
Mode No.		Function	Settings
•°5-305-001	Auto Shut Off Time Setting †	Selects the auto shut off time in one-minute steps.	NA version 1 ~ 120 Default = 60 Other versions 1 ~ 999 Default = 60
		<i>The copier main switch is shut off automatically after the selected auto shut off time if SP5-305-002 is set to 0.</i>	
•°5-305-002	Auto Shut Off Selection †	Selects the "Automatic Shut Off" mode. <i>The copier automatically shuts itself off at the auto shut off time selected (SP5-305-001).</i>	0: YES 1: NO Default = 0 (NA) Default = 1 (Others)
°5-401	User Code Mode †	After JP101 on the main board is cut, either key counter mode or user code mode can be selected with this SP mode.	0: Key Counter 1: User Code
•°5-402	User Code Counter Check †	Displays the user code counters. <i>The current user code is displayed in copy counter, and the copy count for that user code is displayed in the reduce/enlarge indicator. Hold down the "•" key to display the last three digits. Use the ⊞ and ⊞ keys to check each user code counter.</i>	
•°5-404-001 to 5-404-002	User Code Counter Clear †	Resets the user code counters. SP5-404-001: Resets the counter for the user code that is now displayed in the reduce/enlarge indicator. SP5-404-002: Resets all the UC counters. To reset the counter(s), press the R/# key.	
		<i>SP5-404-001: The user code must be input at the numeric keys before it can be displayed and the counter reset, so you must know what user codes are in use. Take a look with SP5-405.</i>	
•°5-405	User Code Number Setting †	Use this mode to input the user code numbers (max. 3 digits).	1 ~ 999 (max. 50 codes)
		<i>Up to 50 user codes can be set. To input a code, enter it at the numeric keys then press the R/# key. Then you can input another. To check the user codes input so far, use the ⊞ and ⊞ keys. The user codes input will be displayed in reduce/enlarge counter.</i>	

Mode No.		Function	Settings
•°5-407-001 to 5-407-002	User Code Number Clear †	Deletes user code numbers. SP5-404-001: Deletes individual user code numbers. Enter the required user code at the numeric keys, then press the [R/#] key. (To see which user codes are being used, use SP5-405.) SP5-404-002: Deletes all the user code numbers.	
°5-408	Number of Registered User Codes Display †	Displays the number of registered user codes in the reduce/enlarge indicator.	
•°5-410	User Code Reset Time Setting †	Selects the user code reset time in one-second steps. This is the time that the current user code remains active after the end of the copy job.	1 ~ 999 Default = 60
°5-501-001	PM Interval Setting †	Sets the PM interval. (1,000 copies per step [Range: 1 to 999])	1 ~ 999 120: Type 1 100: Type 2
°5-501-002	PM Interval Setting (PM Alarm Mode Setting) †	Specifies whether PM alarm mode is on or off. <i>If PM alarm mode is on, the manual ID level/ADS indicator and copy counter blink when the PM counter reaches the PM interval.</i>	0: OFF 1: ON
5-504	RDS/CSS Alarm Level for Paper Jam (Paper Jam Alarm Level Setting) † Used in Japan only. Do not change the factory setting.		
5-505	RDS/CSS Alarm Level for SC (Service Call Alarm Level Setting) † Used in Japan only. Do not change the factory setting.		
°5-507	RDS/CSS Alarm Level for Supplies (Supply Alarm Mode Setting) † Used in Japan only. Do not change the factory setting.		
5-801	Memory All Clear †	Resets all the correction data for process control and all software counters, and returns all modes and adjustments to the default settings. See Service Tables - section 2.2.4 for how to perform this SP mode. Normally, this SP mode should not be performed. <i>This SP mode is required only when replacing the RAM board, or when the copier malfunctions due to a damaged RAM board.</i>	

Mode No.		Function	Settings
5-802-001 to 5-802-002	Free Run Mode	Performs the free run SP5-802-001: Continuous free run SP5-802-002: One time free run	
		<i>Before starting, close the platen or ARDF. Press the  key to start the free run. Press the  key to stop the free run.</i>	
5-803	Input Check Mode †	Displays the data received from sensors and switches.	For details, see Service Tables section 2-5.
5-804	Output Check Mode	Turns on the electrical components individually for test purposes.	For details, see Service Tables - section 2-6.
°5-810	SC Reset †	Resets any service call condition that was caused by a level A error (see the Troubleshooting section). After doing SP5-810, turn the copier main switch off and on.	
5-811	Machine Serial No. Input † For use with features that are available in Japan only		
°5-812	Telephone Number Input † (A207 copier only)	Use this to input the telephone number of the service representative (this is displayed when a service call condition occurs.) Maximum 16 digits. Press the "." key to input a pause (–). Press the  key to delete the input telephone number.	
°5-816	RDS/CSS Function Setting † For use in Japan only. Do not change the factory setting.		
5-817	Repair Time Transmission † For use in Japan only. Do not change the factory setting.		
°5-905	APS A4/LT Sideways Priority †	Specifies whether the machine selects LT sideways paper if the original is A4. If "ON" is selected, LT sideways copy paper is selected automatically when the APS sensors detect an A4 sideways original. This feature does not work in reverse (A4 sideways paper is not selected for an LT sideways original).	0: OFF 1: ON
•°5-906	Manual Staple Reset Time Setting †	Sets the manual staple reset time. (1 second per step [Range: 1 to 999]) <i>After the end of a copy job in sort mode, manual staple mode is reset automatically when the manual staple reset time has passed.</i>	1 ~ 999 Default = 20 s

Mode No.		Function	Settings
•°5-907	Cover Mode Selection †	Used to select whether to have front cover, front and back covers, or front cover with image and back cover blank image added to copies in cover mode. Copy paper for the cover pages should be placed on the by-pass feed table.	1: Front/Back 2: Front 3: Front with Image/Back is blank
•°5-908	Image Shift/Erase Selection †	Selects whether to have an image shift mode or an image erase mode.	1: Erase mode 2: Shift mode
•°5-909	10 key Zoom/Size Magnification †	Selects whether to have a 10 key zoom function or a size magnification function.	1: Size magnification 2: 10 key zoom function
•°5-910	Guidance Language Setting † (A207 copier only)	Selects the language used on the operation panel display (except for SP mode guidance).	1: English 2: French 3: German 4: Italian 5: Spanish 6: Swedish 7: Portuguese 8: Danish 9: Norwegian 10: Finnish 11: Dutch
•°6-001	SADF Auto Reset Time Setting †	Sets the auto reset time for SADF mode. (1 second per step [Range: 1 to 99 seconds])	1 ~ 99 Default = 5
°6-003	Auto Sort Selection †	Specifies whether auto sort mode is on or off. In auto sort mode, when two or more originals are placed on the ADF, sort mode is selected if the copy quantity is between 2 and 20.	0: OFF 1: ON
°6-005	Blank Copy for Last Odd Originals in Duplex †	Specifies whether a blank copy is added after the last page for an odd number of originals in duplex mode. <i>In SADF or platen mode, the last page always stays in the duplex unit, regardless of this setting.</i>	0: Not added (the last page stays in the duplex unit) 1: Added
6-006-001 to 6-006-002	DF Registration Adjustment †	Adjusts the registration of the document feeder. SP6-006-001: One-sided original SP6-006-002: Two-sided original <i>(0.3 mm per step [Range: -4.8 mm to +4.8 mm])</i> <i>See "Vertical Registration" in the ARDF manual for details on how to use these adjustments.</i>	0 ~ 32 Default = 16

Mode No.		Function	Settings
6-009	DF Free Run with Paper	To start the DF free run, put some sheets of paper on the ARDF then press the  key. Stop the free run by pressing  key.	
		<i>This is a general free run controlled from the copier. For more detailed free run modes, see the manual for the DF.</i>	
°6-010	Auto APS Select (DF) †	Selects whether auto APS mode is used with the DF or not.	0: OFF 1: ON
		<i>If "ON" is selected, APS mode is selected automatically when an original is placed on the DF. This SP mode is in effect only when the APS priority (SP5-003) is set to Manual.</i>	
°6-011	Thick/Thin Original Mode Selection †	Selects the original feed type for the DF. In thin mode, originals will not be pushed back against the left scale.	0: Thick mode 1: Thin mode
°6-101	Sorter Installation †	Use this to specify which sorter is installed.	0: No sorter 1: A557 sorter 2: A556 sorter 3: Not used 4: A568 sorter adapter only
		<i>After setting this SP mode, the copier main switch must be turned off and on. For the A555, A658 and A664 sorter stapler, the setting does not have to be changed (keep it at 0).</i>	
°6-102	Sorter Stack Limit †	Select which sorter stack limit to use.	0: OFF 1: ON
		<i>OFF: Sorting and stacking can be done until the sorter tray cannot take any more paper. Then copying stops and the R indicator lights.</i> <i>ON: Sorting and stacking can be done until the following limit is reached. Then copying stops and the R indicator lights.</i> A664 Sorter/Stapler Sort or Stack Mode: 50 A658 Sorter/Stapler Sort Mode: 30 (A4/LT), 25 (B4/LG, A3/DLT) Stack Mode: 25 (A4/LT, 20 (B4/LG, A3/DLT) A555 Sorter/Stapler Sort Mode: 30 (A4/LT), 25 (B4/LG, A3/DLT) Stack Mode: 25 (A4/LT), 20 (B4/LG, A3/DLT) A556 Sorter Sort Mode: 30 (A4/LT), 15 (B4/LG), 10 (A3/DLT) Stack Mode: 30 (A4/LT), 10 (B4/LG, A3/DLT) A557 Sorter Sort or Stack Mode: 20 (A4/LT), 15 (B4/LG), 10 (A3/DLT)	

Mode No.		Function	Settings
°6-104	Staple Sheet Limit †	Select whether there is a stapling limit for the sorter stapler.	0: OFF 1: ON
		<i>OFF: Copies of up to 25 pages can be stapled for all paper sizes.</i> <i>ON: The staple indicator will go out after the following limit number of pages has been stacked and stapling will not be done even if the user selects stapling mode.</i> A664 Sorter/Stapler 50 (A4-B5/LT, A3-B4/ DLT-LG) A658 Sorter/Stapler: 20 (A4 - B5/LT, A3 - B4 / DLT - LG) A555 Sorter/Stapler: 20 (A4 - B5/LT, A3 - B4 / DLT - LG)	
6-105-001 to 6-105-002	Staple Position Adjustment (for the A664 only) †	Adjusts the staple position. SP6-105-001: Vertical staple position ① SP6-105-002: Horizontal staple position ②  A204M500.wmf	0 ~ 14 Default = 7 (0.5 mm per step)
6-107	Sorter Free Run Mode	Start the sorter free run by pressing the  key. Stop it by pressing the  key. <i>This is a general free run controlled from the copier. For more detailed free run modes, see the sorter manuals.</i>	
°7-001	Total Operation Time Display †	Displays the total operation time (hours). <i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-002	Total Original Counter Display †	Displays the total number of scanned originals (DF + platen). <i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-003	Copy Charge Counter for RDS/CSS Display † This is for use with features that are available only in Japan. However, it does show how many originals have been copied (total of DF mode + platen mode). The 4th ~ 6th digits are displayed in the reduce/enlarge indicator. Hold down the "0" key to display the 7th digit, and hold down the "." key to display the 3rd ~ 1st digits.		

Mode No.		Function	Settings																											
°7-004	Initial Copy Counter Setting for RDS/CSS Display † This is for use with features that are available only in Japan. However, it does show the total number of copies that have been made. The 4th ~ 6th digits are displayed in the reduce/enlarge indicator. Hold down the "0" key to display the 7th digit, and hold down the "." key to display the 3rd ~ 1st digits.																													
°7-101-001 to 7-101-005	Total Copies by Paper Size †	Displays the total number of copies by paper size.																												
		<table><tr><th>SP Number</th><th>A4 Version</th><th>LT Version</th></tr><tr><td>SP7-101-001</td><td>A3</td><td>DLT</td></tr><tr><td>SP7-101-002</td><td>B4</td><td>LG</td></tr><tr><td>SP7-101-003</td><td>A4</td><td>LT</td></tr><tr><td>SP7-101-004</td><td>B5</td><td>HLT</td></tr><tr><td>SP7-101-005</td><td>Others</td><td>Others</td></tr></table>		SP Number	A4 Version	LT Version	SP7-101-001	A3	DLT	SP7-101-002	B4	LG	SP7-101-003	A4	LT	SP7-101-004	B5	HLT	SP7-101-005	Others	Others									
		SP Number		A4 Version	LT Version																									
		SP7-101-001		A3	DLT																									
SP7-101-002	B4	LG																												
SP7-101-003	A4	LT																												
SP7-101-004	B5	HLT																												
SP7-101-005	Others	Others																												
<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>																														
°7-203	Drum Counter †	Displays the drum rotation time (hours).																												
		<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>																												
°7-204-001 to 7-204-008	Feed Unit Counter †	Displays the total number of copies fed from each feed unit.																												
		<table><tr><th>SP Number</th><th>Without Duplex</th><th>With Duplex</th></tr><tr><td>SP7-204-001</td><td>1st tray</td><td>—</td></tr><tr><td>SP7-204-002</td><td>2nd tray</td><td>1st tray</td></tr><tr><td>SP7-204-003</td><td>3rd tray</td><td>2nd tray</td></tr><tr><td>SP7-204-004</td><td>4th tray</td><td>3rd tray</td></tr><tr><td>SP7-204-005</td><td>5th tray</td><td>4th tray</td></tr><tr><td>SP7-204-006</td><td>LCT</td><td>LCT</td></tr><tr><td>SP7-204-007</td><td>By-pass</td><td>By-pass</td></tr><tr><td>SP7-204-008</td><td>—</td><td>Duplex</td></tr></table>		SP Number	Without Duplex	With Duplex	SP7-204-001	1st tray	—	SP7-204-002	2nd tray	1st tray	SP7-204-003	3rd tray	2nd tray	SP7-204-004	4th tray	3rd tray	SP7-204-005	5th tray	4th tray	SP7-204-006	LCT	LCT	SP7-204-007	By-pass	By-pass	SP7-204-008	—	Duplex
		SP Number		Without Duplex	With Duplex																									
		SP7-204-001		1st tray	—																									
SP7-204-002	2nd tray	1st tray																												
SP7-204-003	3rd tray	2nd tray																												
SP7-204-004	4th tray	3rd tray																												
SP7-204-005	5th tray	4th tray																												
SP7-204-006	LCT	LCT																												
SP7-204-007	By-pass	By-pass																												
SP7-204-008	—	Duplex																												
<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>																														
°7-205	DF Counter †	Displays the total number of originals fed by the DF.																												
		<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>																												

Mode No.		Function	Settings
°7-206	Stapler Counter †	Displays the total number of stapling runs.	
		<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-301-001 to 7-301-003	Total Copies by Magnification †	Displays the following counters: 7-301-001: Copies made in full size mode 7-301-002: Copies made with reduction 7-301-003: Copies made with enlargement	
		<i>The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-401	Total Service Call Counter †	Displays the total number of service calls that have occurred.	
°7-402	SC Counter by Service Call †	Displays the service call counters for each service call code.	
		The service call code is displayed in the copy counter indicator, and the number of times this SC code has occurred is displayed in reduce/enlarge indicator. By pressing the  and  keys, another service call number and its counter can be displayed.	
°7-501	Total Jam Counter † (Copies + Originals)	Displays the total number of copy jams plus original jams (max. 4 digits).	
		<i>The first digit is displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-502	Total Jams by Paper Size † (Note: This is actually the Total Copy Paper Jam Counter. The counter is not divided up by Paper Size)	Displays the total copy paper jam counter (max. 4 digits).	
		<i>The first digit is displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	
°7-503	Total Original Jam Counter	Displays the total original jam counter (max. 4 digits).	
		<i>The first digit is displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>	

Copier

Mode No.		Function	Settings														
°7-504-001 to 7-504-006	Total Jams by Location †	Displays the total copy paper jam counts by location (max. 4 digits).															
		<table><tr><th>SP Number</th><th>Paper Jam Location Symbol</th></tr><tr><td>SP7-504-001</td><td>Y</td></tr><tr><td>SP7-504-002</td><td>A</td></tr><tr><td>SP7-504-003</td><td>B</td></tr><tr><td>SP7-504-004</td><td>C</td></tr><tr><td>SP7-504-005</td><td>Z</td></tr><tr><td>SP7-504-006</td><td>R</td></tr></table>		SP Number	Paper Jam Location Symbol	SP7-504-001	Y	SP7-504-002	A	SP7-504-003	B	SP7-504-004	C	SP7-504-005	Z	SP7-504-006	R
		SP Number		Paper Jam Location Symbol													
		SP7-504-001		Y													
		SP7-504-002		A													
		SP7-504-003		B													
		SP7-504-004		C													
SP7-504-005	Z																
SP7-504-006	R																
<i>The first one digit is displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>																	
°7-505-001 to 7-505-002	Total Original Jams by Location †	Displays the total original jams in the DF by location (max. 4 digits). SP7-505-001: Feed-in section SP7-505-002: Feed-out section															
		<i>The first digit is displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits.</i>															

Mode No.		Function	Settings																																																				
°7-801-001 to 7-801-004	Main ROM Version Display †	Displays the main ROM version. SP7-801-001: Copier main ROM version SP7-801-002: Paper tray unit main ROM version SP7-801-003: DF main ROM version SP7-801-004: Sorter stapler main ROM version																																																					
		The ROM version is displayed by a six-digit number. The first three digits are displayed in the reduce/enlarge indicator. Hold down the "." key to display the last three digits. The six-digit number shows the ROM version as follows. Last four digits of ROM P/No. Suffix of ROM P/No.																																																					
		<table><tr><th>Last two digits</th><th>Suffix</th><th>Last two digits</th><th>Suffix</th></tr><tr><td>00</td><td>No suffix</td><td>13</td><td>M</td></tr><tr><td>01</td><td>A</td><td>14</td><td>N</td></tr><tr><td>02</td><td>B</td><td>16</td><td>P</td></tr><tr><td>03</td><td>C</td><td>17</td><td>Q</td></tr><tr><td>04</td><td>D</td><td>18</td><td>R</td></tr><tr><td>05</td><td>E</td><td>19</td><td>S</td></tr><tr><td>06</td><td>F</td><td>20</td><td>T</td></tr><tr><td>07</td><td>G</td><td>22</td><td>V</td></tr><tr><td>08</td><td>H</td><td>23</td><td>W</td></tr><tr><td>10</td><td>J</td><td>24</td><td>X</td></tr><tr><td>11</td><td>K</td><td>25</td><td>Y</td></tr><tr><td>12</td><td>L</td><td>26</td><td>Z</td></tr></table>	Last two digits	Suffix	Last two digits	Suffix	00	No suffix	13	M	01	A	14	N	02	B	16	P	03	C	17	Q	04	D	18	R	05	E	19	S	06	F	20	T	07	G	22	V	08	H	23	W	10	J	24	X	11	K	25	Y	12	L	26	Z	
		Last two digits	Suffix	Last two digits	Suffix																																																		
00	No suffix	13	M																																																				
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02	B	16	P																																																				
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04	D	18	R																																																				
05	E	19	S																																																				
06	F	20	T																																																				
07	G	22	V																																																				
08	H	23	W																																																				
10	J	24	X																																																				
11	K	25	Y																																																				
12	L	26	Z																																																				
Note: 09, 15, 21 do not exist because suffixes I, O, and U are not used.																																																							
°7-803	PM Counter Check †	Displays the PM counter after the last PM (max. 6 digits). The first three digits are displayed in the reduce/enlarge indicator; hold down the "." key to display the last three digits.																																																					
°7-804	PM Counter Clear	Resets the PM counter. The counter will be reset when you press the final [R/#] key when entering this SP mode.																																																					
°7-807-001	SC Counter Clear †	Resets the total SC counter (SP7-401) and the individual counters for each type of Service Call (SP7-402). To reset the counters, press the [R/#] key.																																																					

Mode No.		Function	Settings																																
°7-807-002	Copy Jam Counter Reset † (displayed as "SC Counter Clear")	Resets the total copy jam counter (SP7-502) and the copy jam counters for individual locations (SP7-504).																																	
		To reset the counters, press the [R/#] key.																																	
°7-807-003	Original Jam Counter Reset † (displayed as "SC Counter Clear")	Resets the total original jam counter (SP7-503) and the original jam counters for individual locations (SP7-505).																																	
		To reset the counters, press the [R/#] key.																																	
°7-808	Counter All Clear	Resets the following counters. <table><tr><th>Counters that are reset</th><th>Counter check</th></tr><tr><td>Operation Time</td><td>SP7-001</td></tr><tr><td>Scanning Counter</td><td>SP7-002</td></tr><tr><td>Copy Counter</td><td>SP7-101</td></tr><tr><td>Total Sheets of Paper Fed from the Paper Tray</td><td>SP7-204</td></tr><tr><td>DF Originals Counter</td><td>SP7-205</td></tr><tr><td>Stapler Counter</td><td>SP7-206</td></tr><tr><td>Reduction/Enlargement Counter</td><td>SP7-301</td></tr><tr><td>Total Service Call Counter</td><td>SP7-401</td></tr><tr><td>Each Service Call Counter</td><td>SP7-402</td></tr><tr><td>Jam Total Counter</td><td>SP7-501</td></tr><tr><td>Copy Paper Jam Total Counter</td><td>SP7-502</td></tr><tr><td>Original Jam Total Counter</td><td>SP7-503</td></tr><tr><td>Total Counter of Copy Paper Jams for Each location</td><td>SP7-504</td></tr><tr><td>Total Counter of Original Paper Jams for Each location</td><td>SP7-505</td></tr><tr><td>PM Counter</td><td>SP7-803</td></tr></table>	Counters that are reset	Counter check	Operation Time	SP7-001	Scanning Counter	SP7-002	Copy Counter	SP7-101	Total Sheets of Paper Fed from the Paper Tray	SP7-204	DF Originals Counter	SP7-205	Stapler Counter	SP7-206	Reduction/Enlargement Counter	SP7-301	Total Service Call Counter	SP7-401	Each Service Call Counter	SP7-402	Jam Total Counter	SP7-501	Copy Paper Jam Total Counter	SP7-502	Original Jam Total Counter	SP7-503	Total Counter of Copy Paper Jams for Each location	SP7-504	Total Counter of Original Paper Jams for Each location	SP7-505	PM Counter	SP7-803	
		Counters that are reset	Counter check																																
Operation Time	SP7-001																																		
Scanning Counter	SP7-002																																		
Copy Counter	SP7-101																																		
Total Sheets of Paper Fed from the Paper Tray	SP7-204																																		
DF Originals Counter	SP7-205																																		
Stapler Counter	SP7-206																																		
Reduction/Enlargement Counter	SP7-301																																		
Total Service Call Counter	SP7-401																																		
Each Service Call Counter	SP7-402																																		
Jam Total Counter	SP7-501																																		
Copy Paper Jam Total Counter	SP7-502																																		
Original Jam Total Counter	SP7-503																																		
Total Counter of Copy Paper Jams for Each location	SP7-504																																		
Total Counter of Original Paper Jams for Each location	SP7-505																																		
PM Counter	SP7-803																																		
After pressing the final [R/#] key when entering this SP mode, the counters will be reset.																																			
°7-810	Copy Counter Clear	Resets the following counters. • Total Original Counter (SP7-002) • Total Copies by Paper Size (SP7-101) • Total Copies by Magnification (SP7-301)																																	
		After pressing the final [R/#] key when entering this SP mode, the counters will be reset.																																	
°7-811	DF Counter Clear	Resets the DF counter (SP7-205).																																	
		After pressing the final [R/#] key when entering this SP mode, the counter will be reset.																																	

Mode No.		Function	Settings																											
°7-816-001 to 7-816-008	Feed Unit Counter Clear †	Reset one of the following counters by pressing the R/# key.																												
		<table><tr><th>SP Number</th><th>Without Duplex</th><th>With Duplex</th></tr><tr><td>SP7-816-001</td><td>1st tray</td><td>—</td></tr><tr><td>SP7-816-002</td><td>2nd tray</td><td>1st tray</td></tr><tr><td>SP7-816-003</td><td>3rd tray</td><td>2nd tray</td></tr><tr><td>SP7-816-004</td><td>4th tray</td><td>3rd tray</td></tr><tr><td>SP7-816-005</td><td>5th tray</td><td>4th tray</td></tr><tr><td>SP7-816-006</td><td>LCT</td><td>LCT</td></tr><tr><td>SP7-816-007</td><td>By-pass</td><td>By-pass</td></tr><tr><td>SP7-816-008</td><td>—</td><td>Duplex</td></tr></table>		SP Number	Without Duplex	With Duplex	SP7-816-001	1st tray	—	SP7-816-002	2nd tray	1st tray	SP7-816-003	3rd tray	2nd tray	SP7-816-004	4th tray	3rd tray	SP7-816-005	5th tray	4th tray	SP7-816-006	LCT	LCT	SP7-816-007	By-pass	By-pass	SP7-816-008	—	Duplex
		SP Number		Without Duplex	With Duplex																									
		SP7-816-001		1st tray	—																									
		SP7-816-002		2nd tray	1st tray																									
		SP7-816-003		3rd tray	2nd tray																									
		SP7-816-004		4th tray	3rd tray																									
		SP7-816-005		5th tray	4th tray																									
		SP7-816-006		LCT	LCT																									
		SP7-816-007		By-pass	By-pass																									
SP7-816-008	—	Duplex																												

Copier

12.2 UP MODE AND SP MODE CROSS REFERENCE TABLE

UP Mode	SP Mode	Function
1	5-019	Paper Size Set
2	5-002	Feed Station Priority Selection
3	5-003	APS Priority Selection
4	6-010	Auto APS Select (DF)
5	5-103	Auto Tray Shift
6	5-013	Counter Up/Down Selection
7	5-017	Maximum Copy Quantity
8	5-101	Auto Reset Time Setting
9	5-102	Auto Energy Saver Time Setting
10	5-305-001	Auto Off Time Setting
11	5-004	ADS Priority Selection
12	5-106	Image Density Level Correction
13	5-907	Cover Mode Selection
14	5-908	Image Shift/Erase Selection
15	5-909	10 Key Zoom/Size Magnification
16	5-107	Image Shift Margin Adjustment
17	5-108	Edge Erase Margin Adjustment
18	5-110	Center Erase Margin Adjustment
19	5-906	Manual Staple Reset Time Setting
20	6-001	SADF Auto Reset Time Setting
21	6-002	Not used
22	6-011	Thick/Thin Original Mode Selection
23	5-402	User Code Counter Check
24	5-404	User Code Counter Clear
25	5-405	User Code Number Setting
26	5-407	User Code Number Clear
27	5-001	All Indicators On
28	4-902	Not used
29	5-122	OHP Slip Sheet Mode Selection
30	5-910	Guidance Language Set
31	5-410	User Code Reset Time Setting
32	5-021	Duplex Priority Selection (Energy Star)

13. PREVENTIVE MAINTENANCE SCHEDULE

13.1 PM TABLE

NOTE: The amounts mentioned as the PM interval indicate the number of copies.

Symbol key: C: Clean R: Replace L: Lubricate I: Inspect

A204/A206/A207	EM	120 k	240 k	360 k	NOTE
OPTICS					
Mirrors, Lens, Reflector		C	C	C	Cotton pad with water, or blower brush.
Exposure Glass	C	C	C	C	Alcohol or glass cleaner
Exposure Lamp	I	C/I	C/I	C/I	Replace if necessary
Green Filter		C	C	C	Dry cloth
Scanner Guide Rails		C	C	C	Dry cloth
ADS, APS sensors		C	C	C	Blower brush. Do SP4-201 after cleaning the ADS sensor.
Lens Block Guide Rail	C	C	C	C	Dry cloth
Dust Filter		C	C	C	Replace if necessary
NOTE: After cleaning the exposure lamp and/or optics, do SP4-001, then 4-201, then 3-105. The toner shield glass has been eliminated. *					
AROUND THE DRUM					
Drum Charge Roller		R	R	R	Clean with the special cloth if necessary (the cloth must be dry)
Drum Charge Roller Cleaner		R	R	R	Replace with the drum charge roller as a set.
Drum Charge Roller Terminal		R	R	R	Replace with the drum charge roller as a set.
ID Sensor		C	C	C	Blower brush. After cleaning, do SP3-001 then SP3-112.
Erase Lamp		C	C	C	Dry cloth
Quenching Lamp		C	C	C	Dry cloth
Pick-off Pawls		C	R	C	Dry cloth
Pre-Transfer Lamp		C	C	C	Dry cloth and blower brush
DEVELOPMENT UNIT					
Developer		R	R	R	Do SP2-214 after replacement.
Side Seal		I	I	I	
Development Filter		R	R	R	
Entrance Seal	C	C	C	C	Replace if necessary
Toner Supply Unit	C	C	C	C	Blower brush

A204/A206/A207	EM	120 k	240 k	360 k	NOTE
PAPER FEED (for each paper feed station)					
Pick-up, Feed, Separation Rollers (Paper tray)	C	C	R	C	Clean with water. Replace these rollers as a set.
Pick-up, Feed, Separation Rollers (LCT, By-pass feed)	C	C	R	C	Clean with water. Replace these rollers as a set.
Separation Torque Limiter (By-pass feed) (A204 only)			R		Clean with water. Replace with the rollers as a set.
Paper Feed Guide Plate		C	C	C	Alcohol
Relay rollers		C	C	C	Alcohol or water
Registration roller		C	C	C	Alcohol or water
Bottom Plate Pad (Paper tray, By-pass feed, LCT)	C	R	R	R	Water
CLEANING UNIT					
Drum Cleaning Blade		R	R	R	Spread setting powder. See "Drum Cleaning Blade Replacement".
Side Seal		C	C	C	Replace if necessary
Cleaning Entrance Seal		C	C	C	Replace if necessary
TRANSFER BELT UNIT					
Transfer Belt	C	C	R	C	Spread setting powder. "See Transfer Belt Cleaning Blade Replacement"
Transfer Belt Cleaning Blade		R	R	R	
Used Toner Tank		C	C	C	Blower brush or vacuum cleaner
FUSING UNIT					
Fusing Entrance and Exit Guide Plates		C	C	C	Suitable solvent
Fusing Lamps		I	I	I	Replace if necessary
Hot Roller		R	R	R	* Grease Barrierta JFE 55/2 on the flange
Pressure Roller *		R	R	R	
Fusing Thermistors	C	I	I	I	Suitable solvent
Hot and Pressure Roller Bearings		I	I	I	Replace if necessary
Fusing Antistatic Brush		I	I	I	Replace if necessary
Cleaning Roller		R	R	R	Suitable solvent
Cleaning Roller Bushings		I	I	I	Replace if necessary
Oil Supply Roller *		R	R	R	

A204/A206/A207	EM	120 k	240 k	360 k	NOTE
Oil Supply Roller Cleaning Brush *		R	R	R	
Fusing Exit Rollers			C		
Turn Guide Transport Rollers			C		
Hot Roller Strippers	C	R	R	R	
Oil Supply Roller Bushing * (One-way)		I	I	I	Replace if necessary
DUPLEX TRAY					
Clutch Spring		L	L	L	Mobil Temp 78. See Note 1.
Feed Roller		R	R	R	
Bottom Plate Pad		R	R	R	
Mylars		I	I	I	Replace if necessary
OTHERS					
Drive Belts		I	I	I	Replace if necessary

A208/A210/A211	EM	120 k	240 k	360 k	NOTE
OPTICS					
Mirrors, Lens, Reflector		C	C	C	Cotton pad with water, or blower brush
Exposure Glass	C	C	C	C	Alcohol or glass cleaner
Exposure Lamp	I	I	I	I	Replace if necessary
Green Filter		C	C	C	Dry cloth
Scanner Guide Rails		C	C	C	Dry cloth
ADS, APS sensors		C	C	C	Blower brush. Do SP4-201 after cleaning the ADS sensor.
Lens Block Guide Rail	C	C	C	C	Dry cloth
Dust Filter		C	C	C	Replace if necessary
NOTE: After cleaning the exposure lamp and/or optics, do SP4-001, then 4-201, then 3-105. The toner shield glass has been eliminated. *					
AROUND THE DRUM					
Drum Charge Roller		R	R	R	Clean with the special cloth if necessary (the cloth must be dry)
Drum Charge Roller Cleaner		R	R	R	Replace with the drum charge roller as a set.
Drum Charge Roller Terminal		R	R	R	Replace with the drum charge roller as a set.
ID Sensor		C	C	C	Blower brush. After cleaning, do SP3-001 then SP3-112.

A208/A210/A211	EM	120 k	240 k	360 k	NOTE
Erase Lamp		C	C	C	Dry cloth
Quenching Lamp		C	C	C	Dry cloth
Pick-off Pawls		C	R	C	Dry cloth
Pre-Transfer Lamp		C	C	C	Dry cloth and blower brush
DEVELOPMENT UNIT					
Developer		R	R	R	Do SP2-214 after replacement.
Side Seal		I	I	I	
Development Filter		R	R	R	
Entrance Seal	C	C	C	C	Replace if necessary
Toner Supply Unit	C	C	C	C	Blower brush
PAPER FEED (for each paper feed station)					
Pick-up, Feed, Separation Rollers (Paper tray) *	C	C	R	C	Water
Pick-up, Feed, Separation Rollers (LCT, By-pass feed)	C	C	R	C	Clean with water. Replace these rollers and the torque limiter as a set.
Separation Torque Limiter (By-pass feed) (A208 only)			R		Clean with water. Replace these rollers and the torque limiter as a set.
Paper Feed Guide Plate		C	C	C	Alcohol or water
Relay rollers		C	C	C	Alcohol or water
Registration roller		C	C	C	Alcohol or water
Bottom Plate Pad (Paper tray, By-pass feed, LCT)	C	R	R	R	Water
CLEANING UNIT					
Drum Cleaning Blade		R	R	R	Spread setting powder. See "Drum Cleaning Blade Replacement".
Side Seal		C	C	C	Replace if necessary
Cleaning Entrance Seal		C	C	C	Replace if necessary
TRANSFER BELT UNIT					
Transfer Belt	C	C	R	C	Spread setting powder. "See Transfer Belt Cleaning Blade Replacement" Wipe with a dry cloth.
Transfer Belt Cleaning Blade	C	R	R	R	
Used Toner Tank		C	C	C	Blower brush or vacuum cleaner
FUSING UNIT					
Fusing Entrance and Exit Guide Plates		C	C	C	Suitable solvent

A208/A210/A211	EM	120 k	240 k	360 k	NOTE
Fusing Lamps		I	I	I	Replace if necessary
Hot Roller		R	R	R	
Pressure Roller		C	R	C	Suitable solvent
Fusing Thermistors	C	I	I	I	Suitable solvent
Hot and Pressure Roller Bearings		I	I	I	Replace if necessary
Fusing Antistatic Brush		I	I	I	Replace if necessary
Cleaning Roller		R	R	R	Suitable solvent
Cleaning Roller Bushings		I	I	I	Replace if necessary
Fusing Exit Rollers			C		
Turn Guide Transport Rollers			C		
Hot Roller Strippers	C	R	R	R	
DUPLUX TRAY					
Clutch Spring		L	L	L	Mobil Temp 78. See Note 1.
Feed Roller		R	R	R	
Bottom Plate Pad		R	R	R	
Mylars		I	I	I	Replace if necessary
OTHERS					
Drive Belts		I	I	I	Replace if necessary

	EM	120 k	240 k	360 k	NOTE
SORTER ADAPTER (A568)					
Exit Drive Roller			C		Alcohol or Water
Upper Roller			C		Alcohol or Water

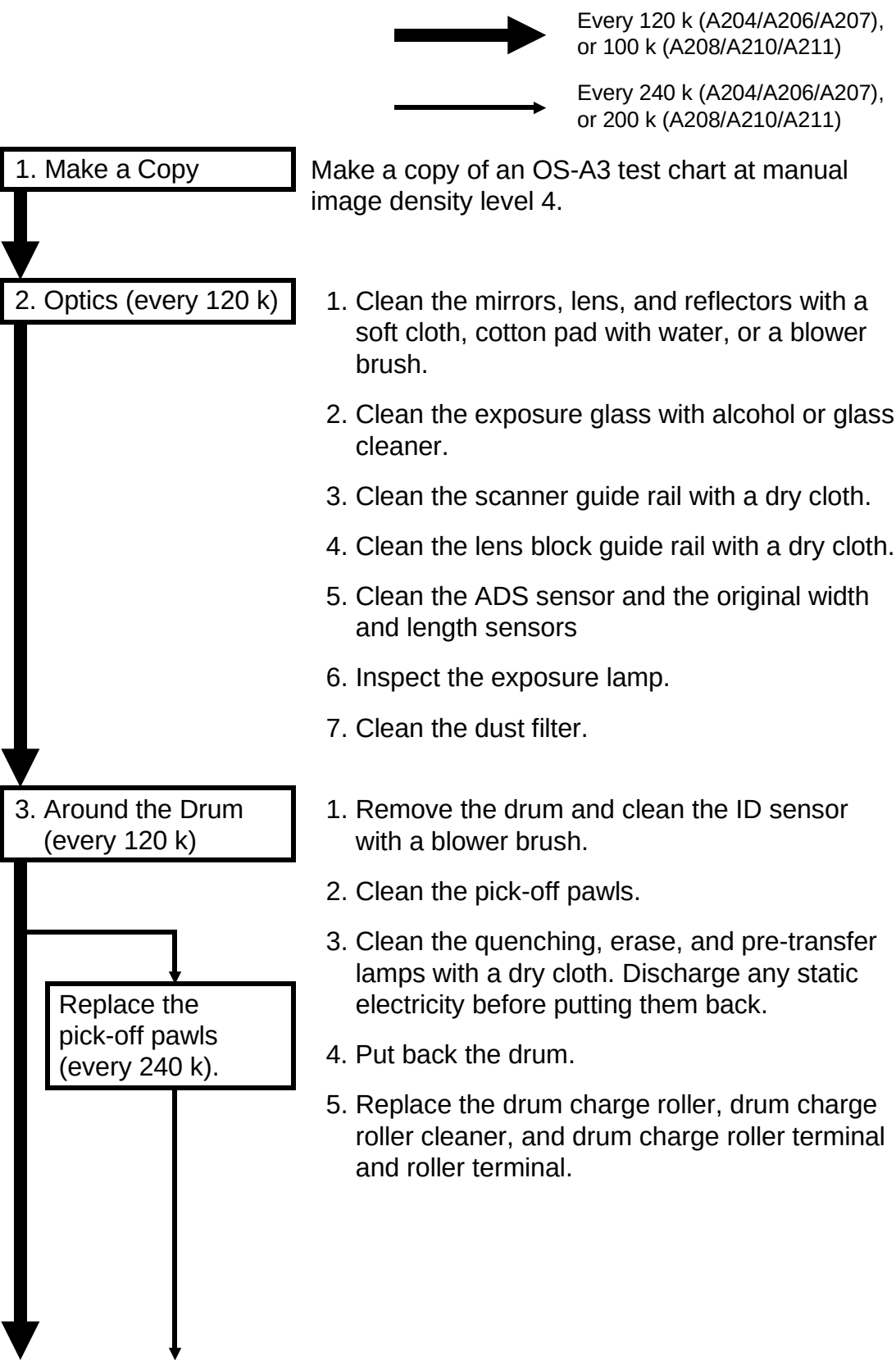
	EM	120 k	240 k	360 k	NOTE
PAPER TRAY UNIT (A549/A550)					
Pick-up, Feed, Separation Rollers	C	C	R	C	Water, Replace these rollers as a set.
Relay rollers		C	C	C	Alcohol or water
Bottom Plate Pad	C	R	R	R	Water
Relay Clutch		I	I	I	Replace every 1,500 k copies.
Feed Clutch		I	I	I	Replace if necessary
Drive Belts		I	I	I	Replace if necessary

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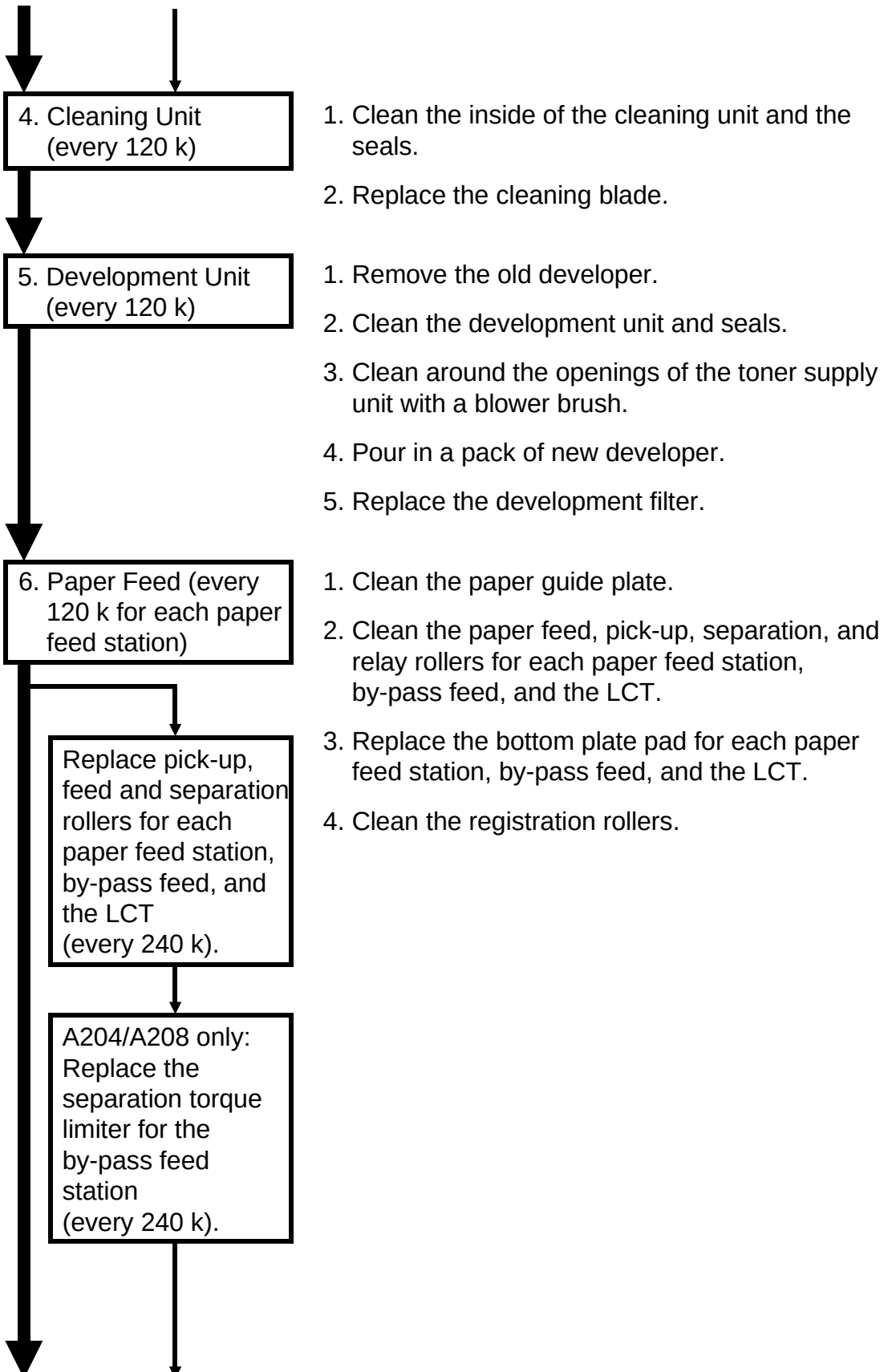
	EM	80 k	160 k	240 k	NOTE
AUTO DOCUMENT FEEDER (A663) (for originals)					
Transport Belt	C	R	R	R	Belt cleaner
Friction Belt	C	R	R	R	Water
Separation Roller	C	R	R	R	Water

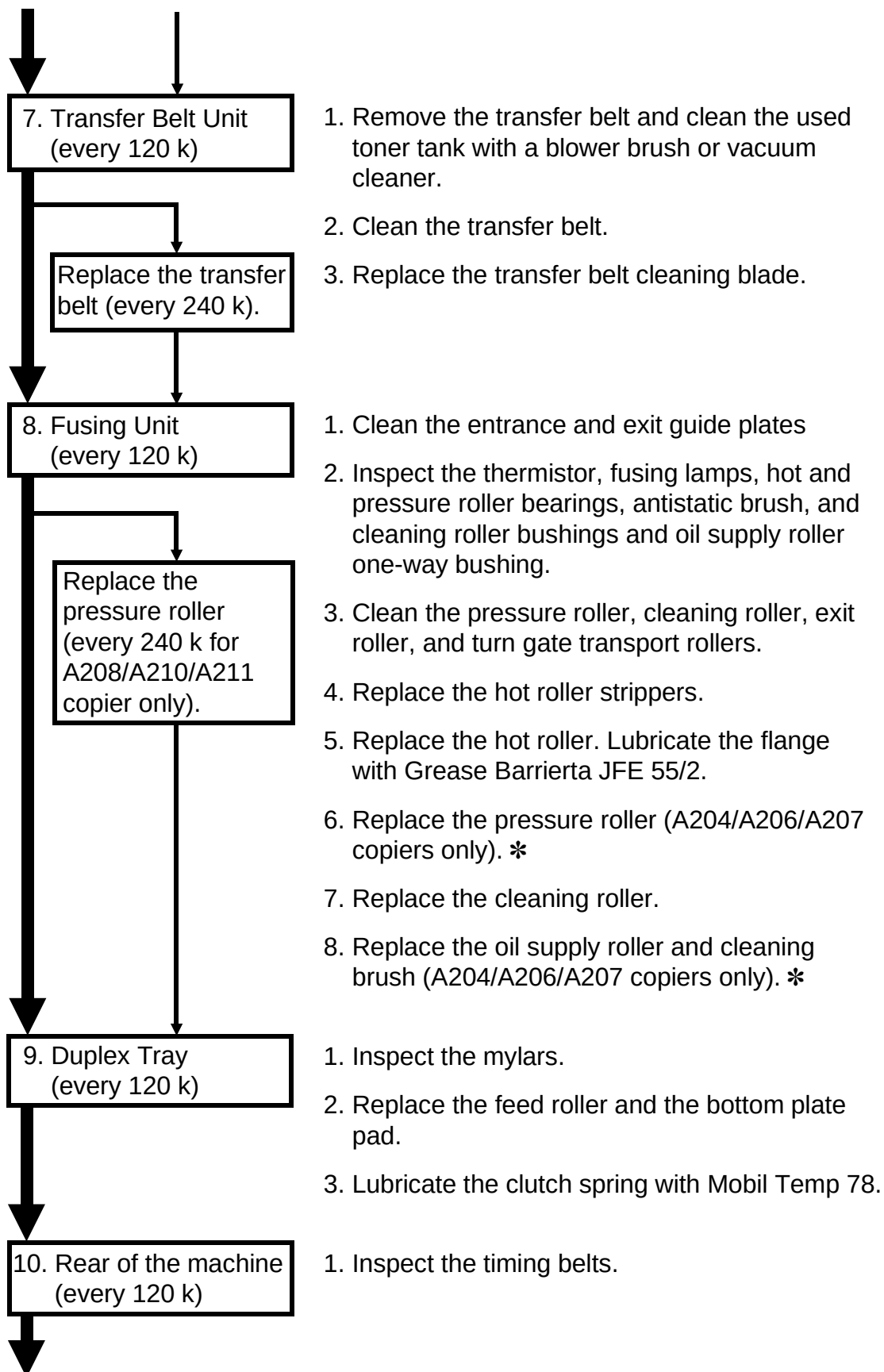
	EM	PM	NOTE
20-BIN SORTER STAPLER (A664)			
Transport and Exit Rollers	C	C	Alcohol or water
Bins	C	C	Alcohol or water
Bin and Paper Sensors	C	C	Alcohol or water
Bushings	L	L	Launa oil; if bushings generate noise
Worm Gears	L	L	Grease G501; if worm gears generate noise
Stapler			Replace after 200 k staple.
Exit Mylars			Replace after 1,000 k copies.
20-BIN SORTER STAPLER (A658)			
Transport and Exit Rollers	C	C	Alcohol or water
Bins	C	C	Alcohol or water
Bin and Paper Sensors	C	C	Blower brush
Bushings	L	L	Launa oil; if bushings generate noise.
Helicam Wheels	L	L	Grease G501; if worm gears generate noise.
Bin Cam Tracks	L	L	Grease G501; if bin cam tracks generate noise.
10-BIN SORTER STAPLER (A555)			
Transport Roller	C	C	Alcohol or water
Bins	C	C	Alcohol or water
Bin and Paper Sensors	C	C	Blower brush
Bushings	L	L	Launa oil; if bushings generate noise.
Helicam Wheels	L	L	Grease G501; if helicam wheels generate noise.
SORTER (A556/A557)			
Bin Guide/Wheel	L	L	Grease G501; if those generate noise.
Bushings	L	L	Grease G501; if bushings generate noise.
Exit Roller	C	C	Alcohol or water

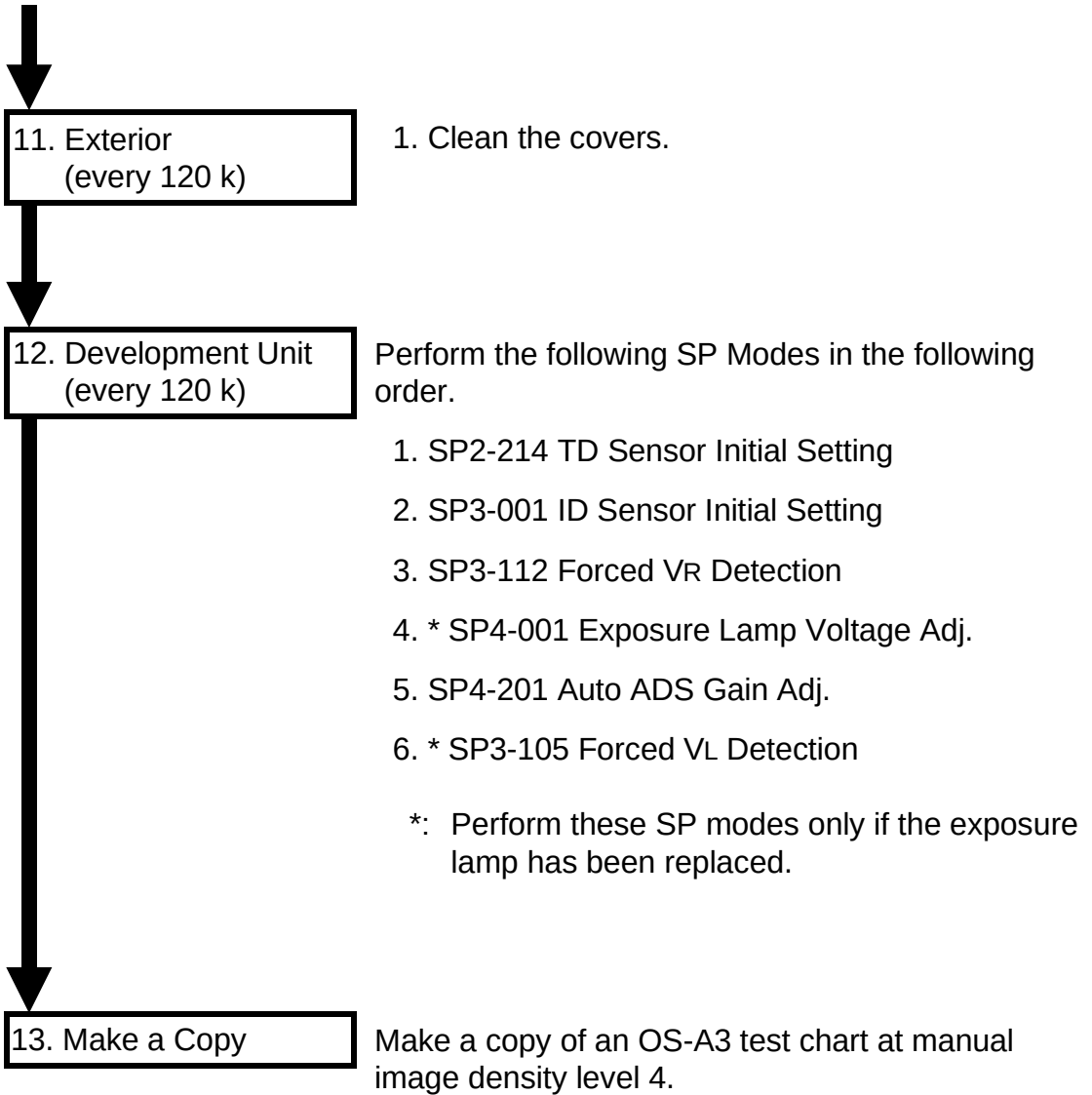
13.2 REGULAR PM PROCEDURE



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14. SPECIAL TOOLS AND LUBRICANTS

* : New or modified items

Part Number	Description	Q'ty
A153 9001	Scanner Adjustment Tool	1
A153 9004	WIPING CLOTH (Drum Charge Roller Cloth)	1
5420 9516	Test Chart - OS-A3 (10 pcs/set)	1
5420 9507	Digital Multimeter	1
A008 9502	Silicone Grease - G40M	1
5442 9103	Launa Oil	1
5447 9078	Heat Resistant Grease - MT-78	1
5203 9501	Grease - 501	1
* 5442 9101	Setting Powder	1
* A028 9300	Grease Barrierta JFE 55/2	1

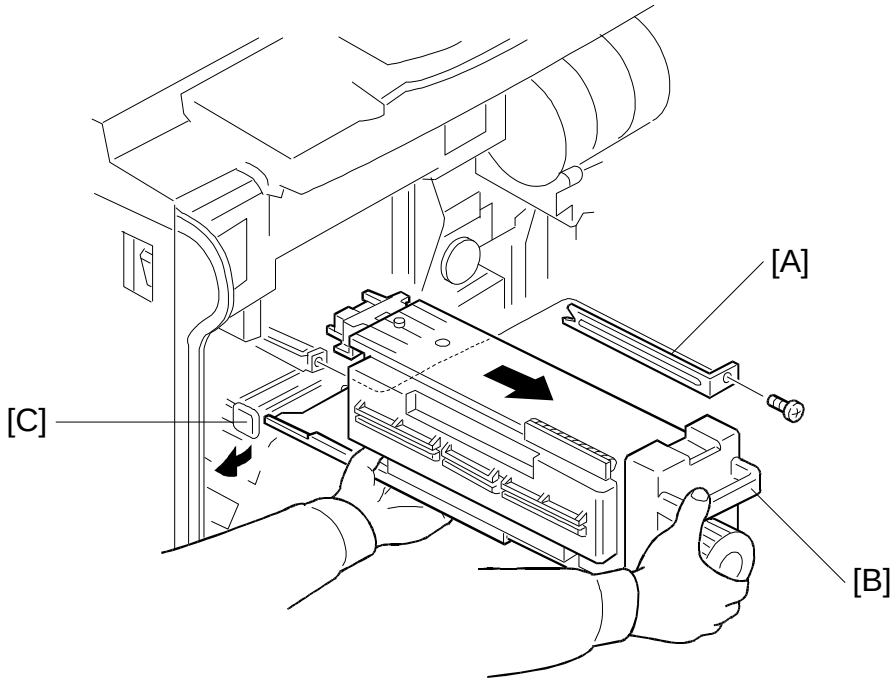
Copier

15. REPLACEMENT AND ADJUSTMENT

15.1 FUSING (A204/A206/A207)

NOTE: For the A208/A210/A211, use the parts and procedures for the A153/A155/A156 in the base copier manual.

15.1.1 FUSING UNIT REMOVAL



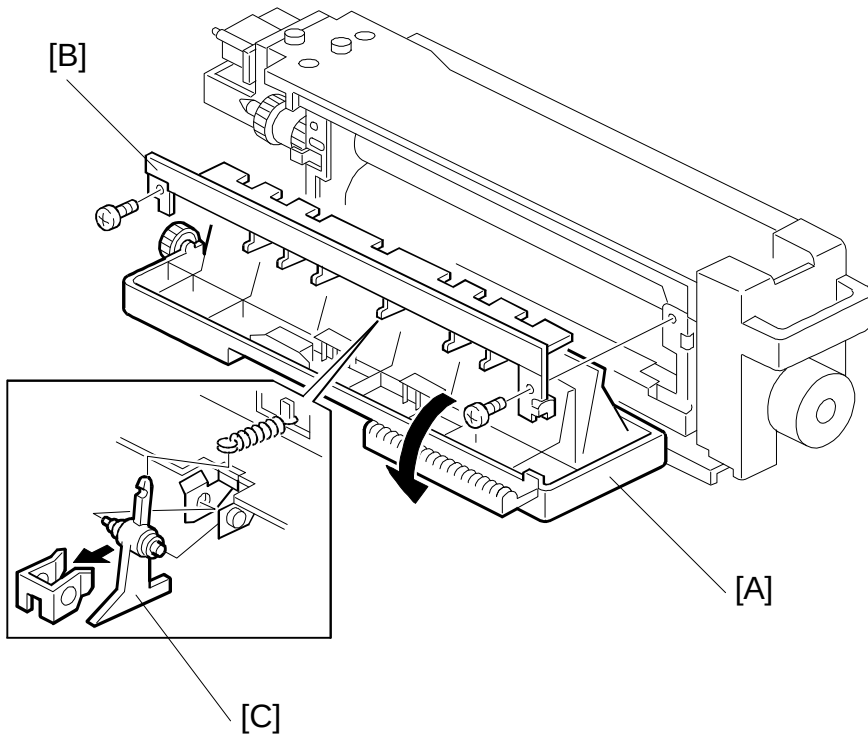
A204R500.wmf

⚠ CAUTION

Before completely removing the fusing unit, support the bottom of the fusing unit.

1. Turn off the main switch and unplug the power supply cord.
2. Remove the stopper bracket [A] (1 screw).
3. Hold the fusing unit cover [B] while pushing the release lever [C] to the left, and pull out the fusing unit until it stops.
4. Push the release lever [C] again, and remove the fusing unit completely.

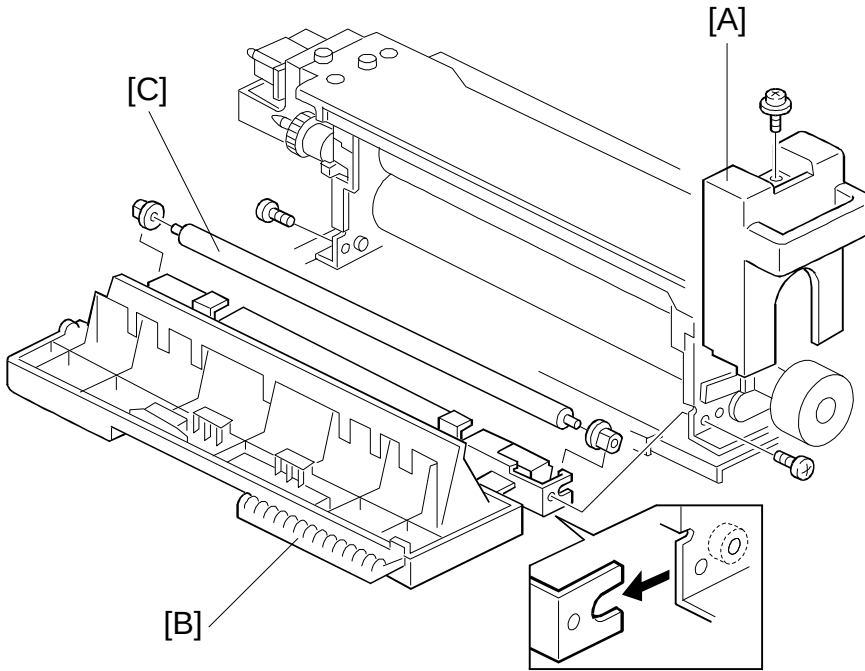
15.2 HOT ROLLER STRIPPER REPLACEMENT



A204R501.wmf

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Open the exit cover [A].
3. Remove the bracket [B] (2 screws).
4. Replace the hot roller strippers [C] (1 spring and 1 stopper each).

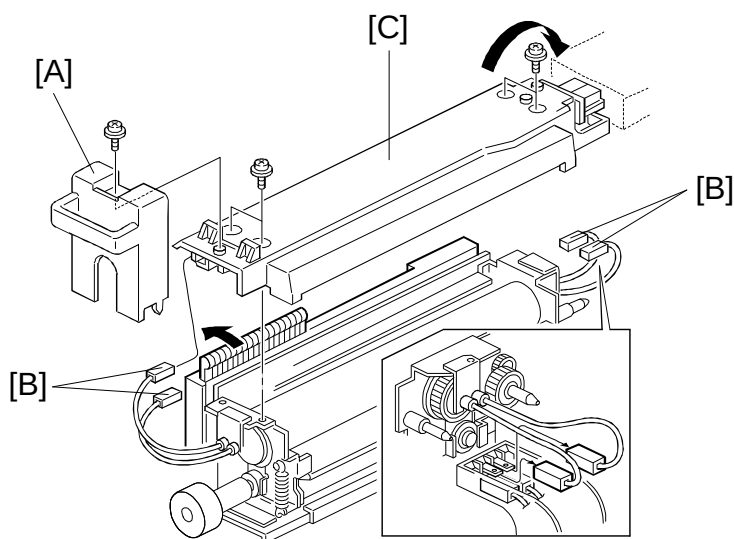
15.3 CLEANING ROLLER REPLACEMENT



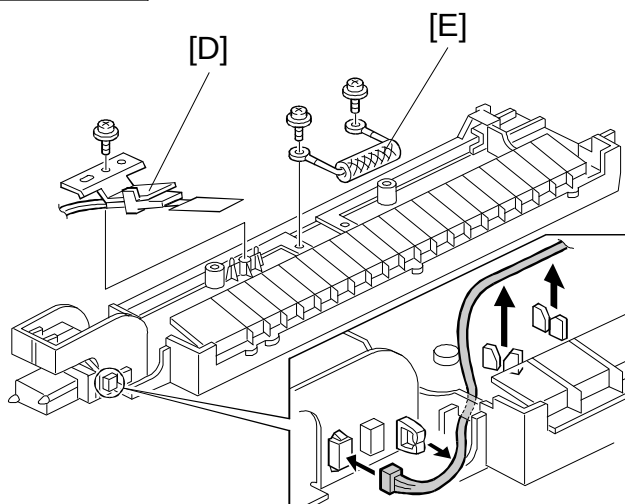
A204R502.wmf

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the fusing front cover [A] (1 screw).
3. Remove the exit cover [B], as shown (2 screw).
4. Replace the cleaning roller [C] (2 bushings).

15.4 THERMISTOR AND THERMOFUSE REPLACEMENT



A204R503.wmf

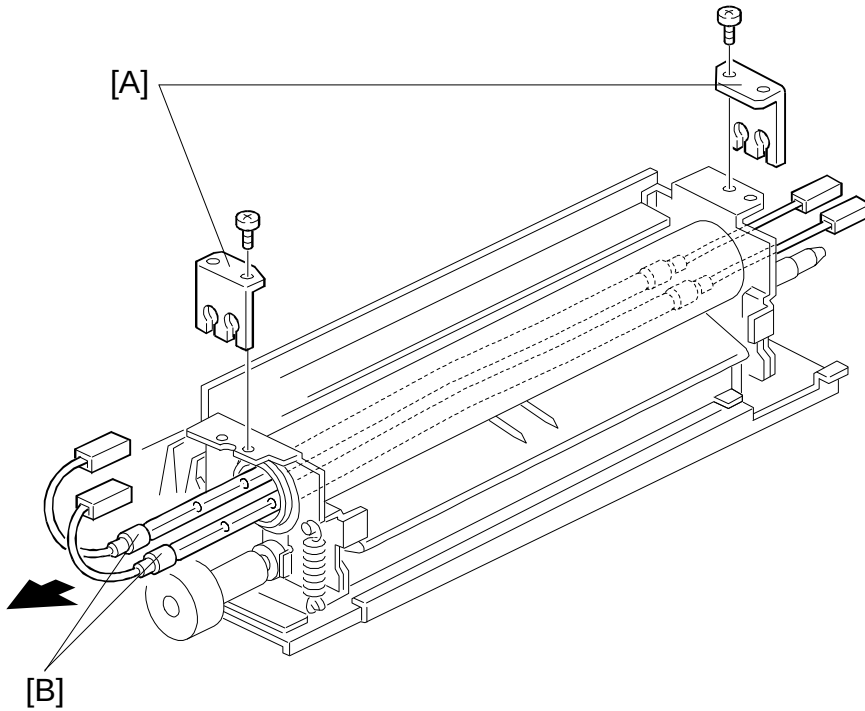


A204R508.wmf

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the fusing front cover [A] (1 screw).
3. Disconnect the 4 connectors [B].
4. Remove the fusing upper unit [C] (4 screws).
5. Replace the thermistor [D] (1 screw and 1 connector) and the thermofuse [E] (2 screws).

NOTE: When reinstalling, connect the connectors [B], as shown.

15.5 FUSING LAMP REPLACEMENT

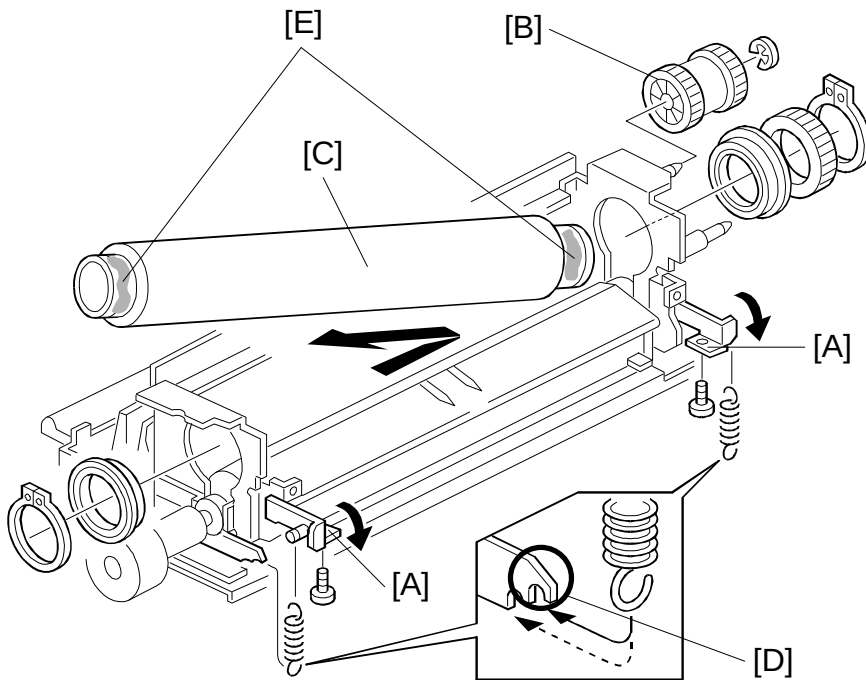


A204R504.wmf

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the fusing front cover and the fusing upper unit. (See Thermistor and Thermofuse Replacement.)
3. Remove the lamp holders [A] (1 screw each).
4. Replace the fusing lamps [B].

NOTE: Do not touch the fusing lamps with bare hands.

15.6 HOT ROLLER REPLACEMENT



A204R505.wmf

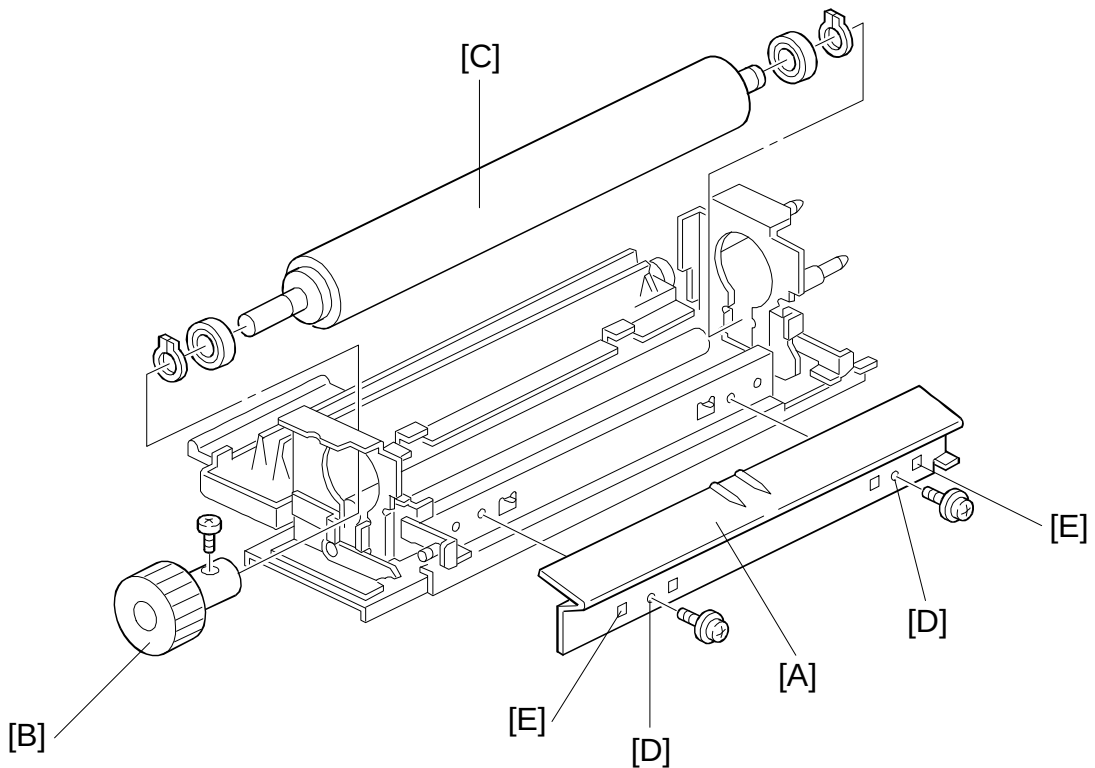
CAUTION

The fusing unit may be hot.

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the fusing lamps. (See Fusing Lamp Replacement.)
3. Turn down the release pressure lever [A], as shown (1 screw at each end).
4. Remove the gear [B] (1 E-ring).
5. Replace the hot roller [C], as shown (2 C-rings, 1 gear, and 2 bearings).

- NOTE:**
- The standard pressure spring position is the upper one [D], as shown.
 - The hot roller for the A204/A206/A207 has no dots at the end, and it is heavier.
 - Lubricate the flange [E] of the hot roller with Grease Barrierta JFE 55/2.

15.7 PRESSURE ROLLER REPLACEMENT



A204R506.wmf

⚠ CAUTION

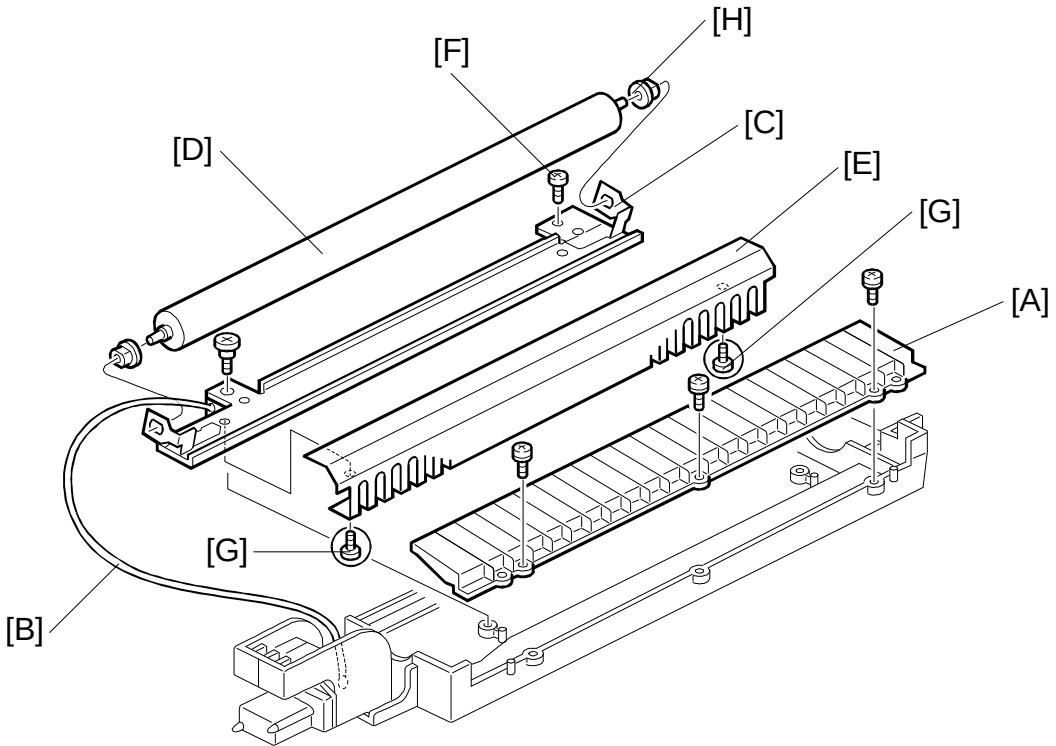
The fusing unit may be hot.

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the hot roller. (See Hot Roller Replacement.)
3. Remove the lower fusing entrance guide [A] (2 screws).
4. Remove the fusing knob [B] (1 screw).
5. Remove the pressure roller [C].
6. Replace the pressure roller (2 C-rings and 2 bearings).

NOTE: 1) When reinstalling the fusing entrance guide [A], use the center screw holes [D] if the standard paper thickness setting is acceptable. Otherwise, use the outer screws [E]; tighten the screws while pushing the guide plate into the upper position (for standard or thin paper). For thick paper, let the entrance guide plate drop to the lowest position.

2) The standard pressure spring position is the upper one.

15.8 OIL SUPPLY ROLLER AND OIL SUPPLY ROLLER CLEANING BRUSH REPLACEMENT



A204R507.wmf

1. Remove the fusing unit. (See Fusing Unit Removal.)
2. Remove the fusing front cover and the fusing upper unit. (See Thermistor And Thermofuse Replacement.)
3. Remove the upper fusing entrance guide [A] (3 screws).
4. Remove the grounding harness [B] (1 screw).
5. Remove the bracket [C] (2 screws).
6. Replace the oil supply roller [D] and the oil supply roller cleaning brush [E] (2 screws and 2 bushings).

NOTE: 1) The screws [F] and [G] are very similar. When reinstalling, do not mix them up. ([F] is longer than [G].)

2) The front oil supply roller bushing [H] is a one-way bushing. When reinstalling, do not mix it up with the rear bushing.

16. SC CODE DESCRIPTIONS

* Only the following SC codes have been changed or added from the base copier.

E720 - Timing Sensor (Roller Drive) Output Error (A555/A658/A664)

- Definition - [B]

When the roller drive/transport motor is turning, the timing sensor takes over 500 ms to change.

- Possible Causes -

- The timing sensor is defective.
- The roller drive/transport motor is defective.
- The main control board is defective.

E721 - Timing Sensor (Bin Lift) Output Error (All sorters)

- Definition - [C]

When the bin lift/bin drive motor is turning, the timing sensor takes over 250 ms to change.

- Possible Causes -

- The timing sensor is defective.
- The bin lift/bin drive motor is defective.
- The main control board is defective.

E722 - Jogger Home Position Sensor Output Error (A555/A658/A664)

- Definition- [C]

- When the jogger bar moves forward, the home position sensor takes over 100 ms to be deactivated.
- When the jogger bar moves backward, the home position sensor takes over 800 ms to be activated.

- Possible Causes -

- The jogger home position sensor is defective.
- The jogger motor is defective.
- The main control board is defective.

E723 - Grip Home Position Sensor Output Error (A555/A658/A664)**- Definition- [C]**

- When the grip motor rotates forwards, the grip home position sensor takes over 0.2 s to be deactivated.
- When the grip motor rotates in reverse, the grip home position sensor takes over 2.5 s to be deactivated.

- Possible Causes -

- The grip home position sensor is defective.
- The grip motor is defective.
- The main control board is defective.

E724 - Stapler Error (A555/A658/A664)**- Definition- [C]**

The stapler motor takes more than 800 ms for one staple operation (from home position to home position).

- Possible Causes -

- The stapler is defective.
- The main control board is defective.

E940 - Main Switch Error**- Definition - [A]**

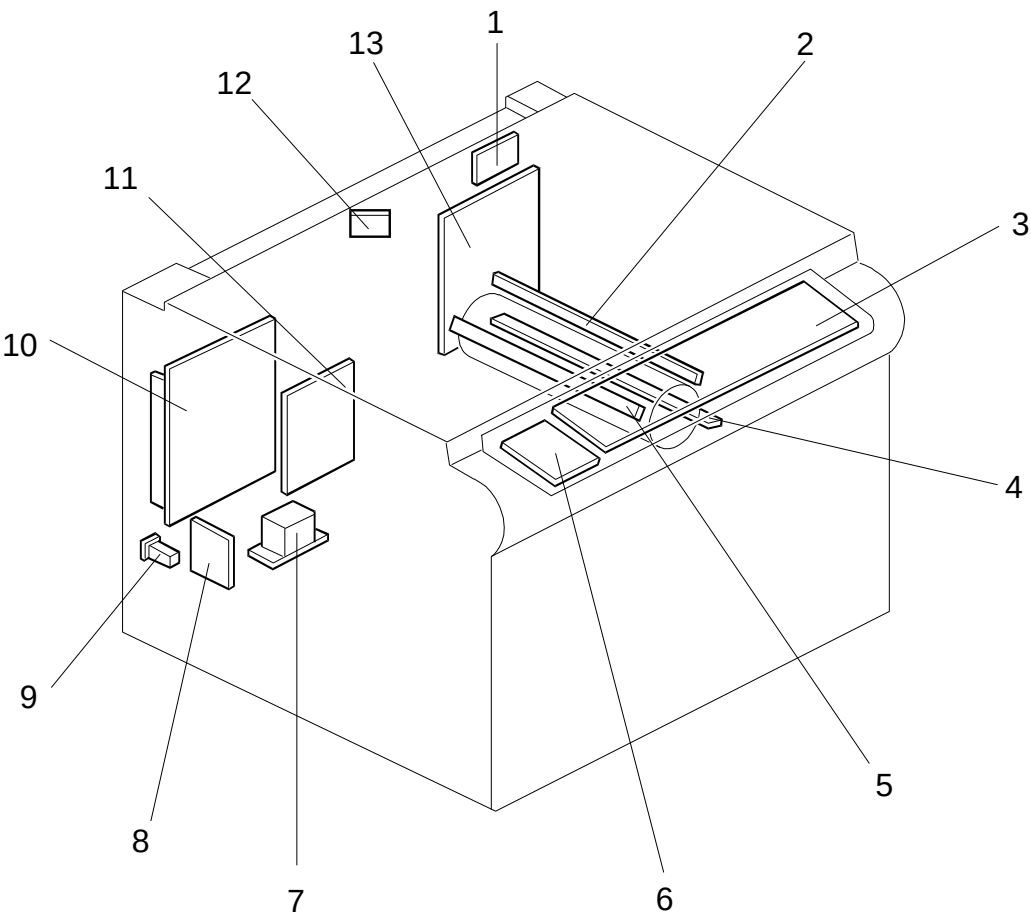
The detection mechanism is as follows:

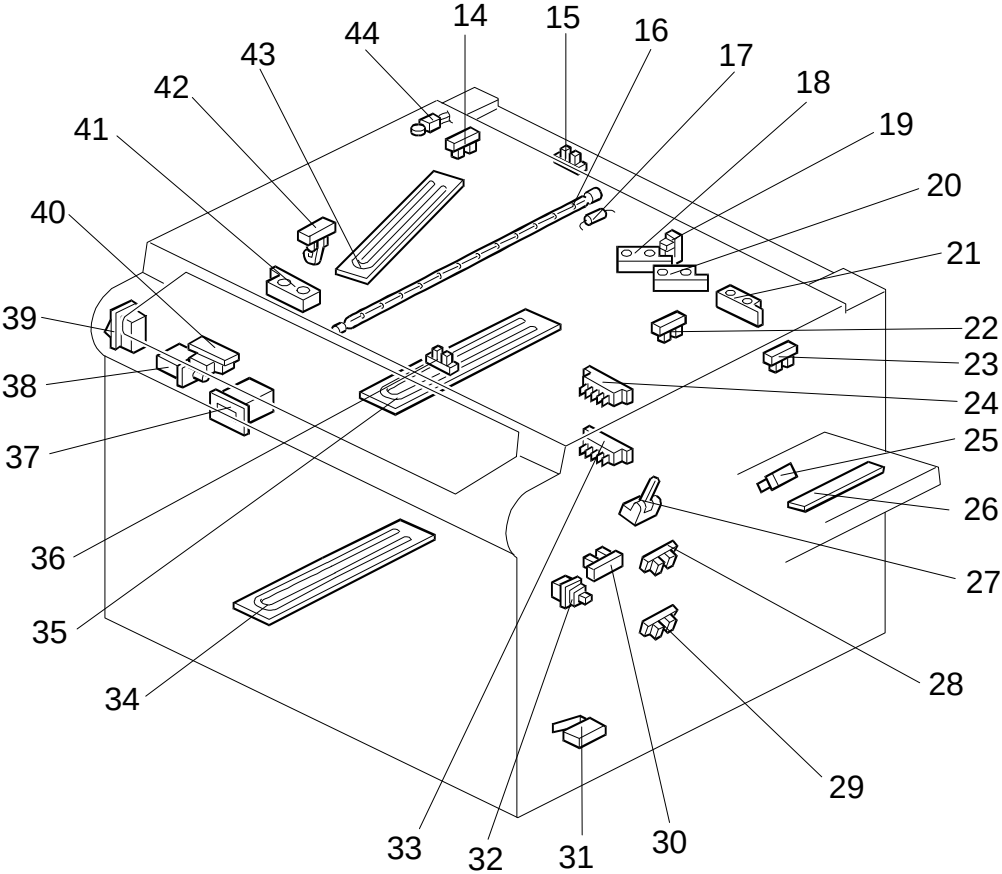
- The machine reaches the auto-off time.
- The solenoid mounted inside the main switch turns on for 3 seconds.
- If the main switch does not turn off, the solenoid is turned off for 1 seconds.
- The solenoid is once again turned on for 3 seconds.
- If the main switch does not turn off at this point, the solenoid turns off and E940 lights.

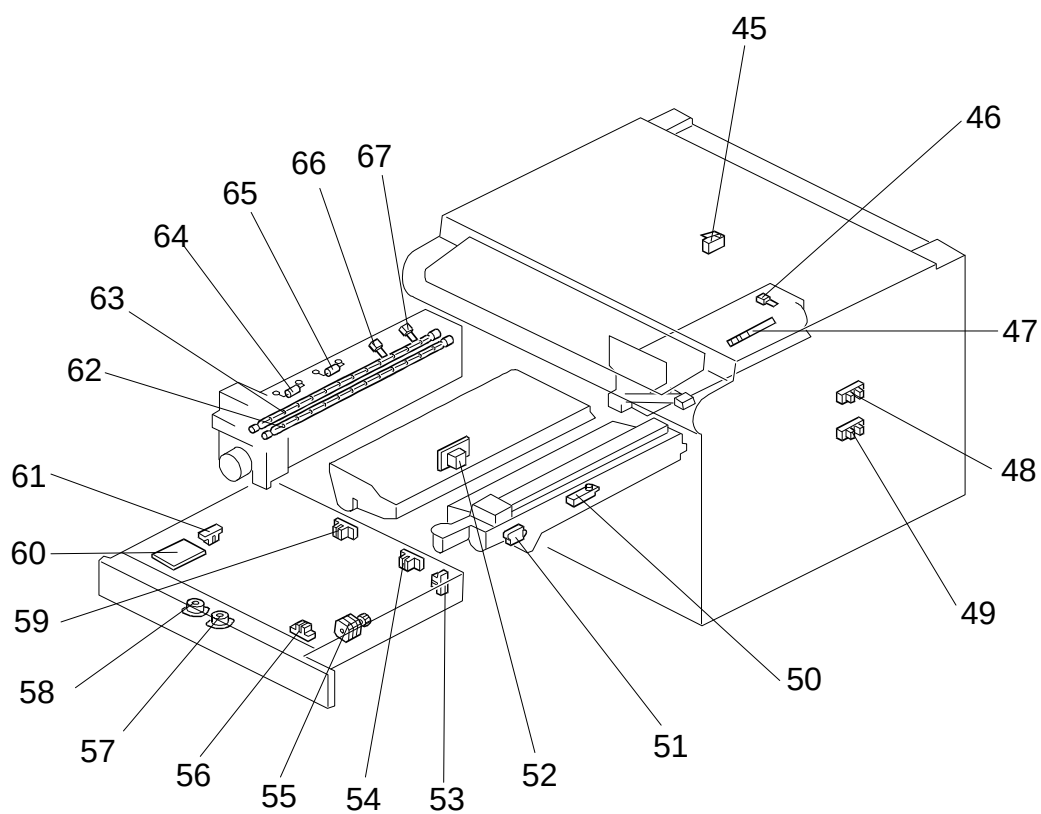
- Possible Causes -

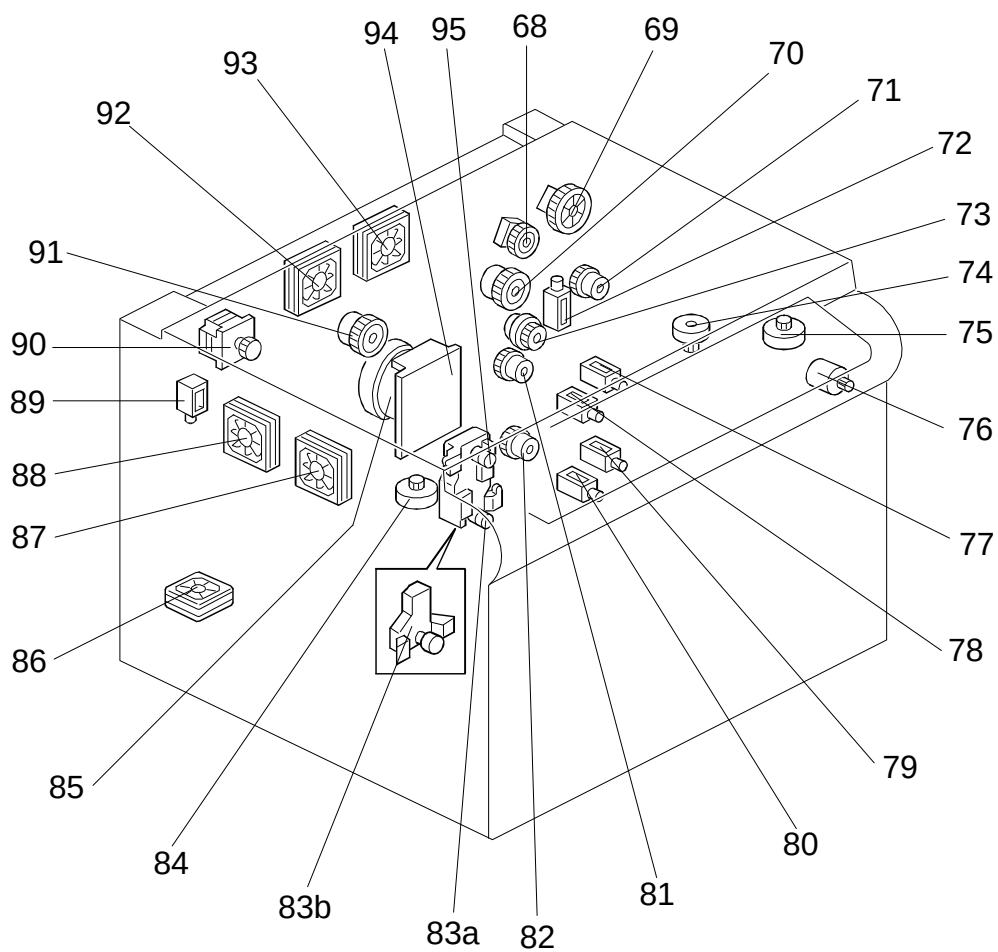
- The main switch is defective.
- The main control board is defective.

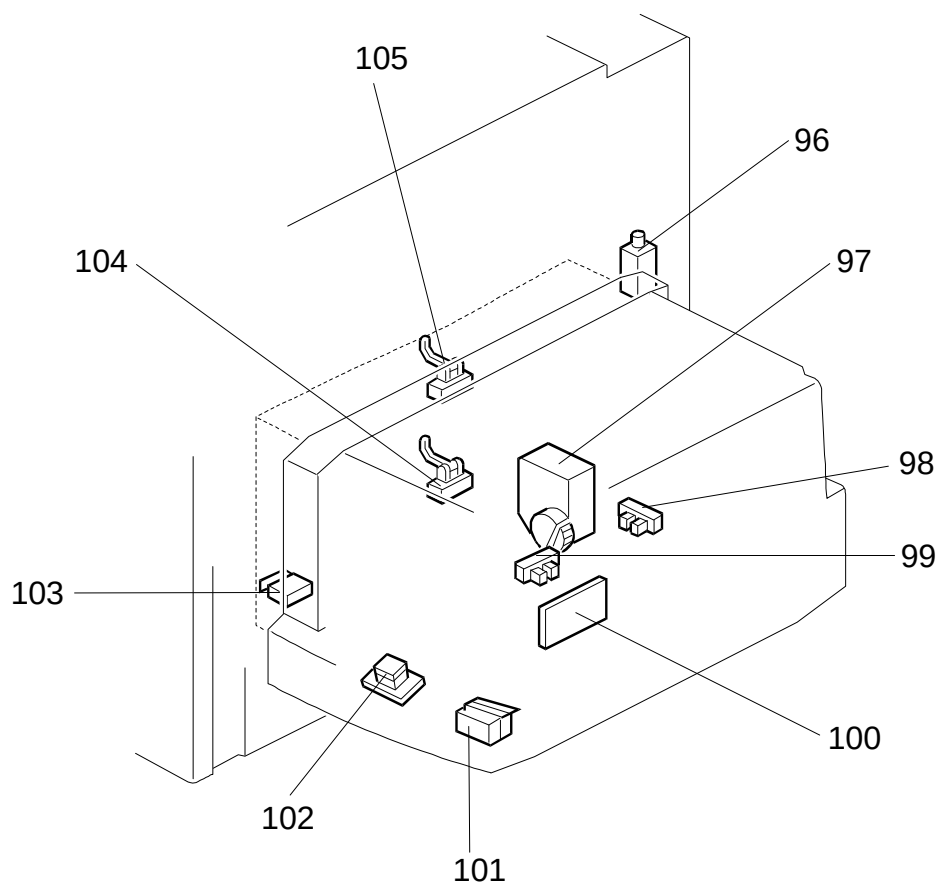
COPIER ELECTRICAL COMPONENT LAYOUT











A204S504.wmf

Description	Index No.	P to P Location
CB High Voltage Supply Board (PCB5)	1	A12
Erase Lamp (L6)	2	H2
Operation Panel Board (PCB7)	3	F2
Pre-transfer Lamp (L4)	4	D13
Quenching Lamp (L5)	5	D14
Liquid Crystal Display Board (A207 machines only) (PCB10)	6	E2
Transformer (220 ~ 240 V machines only) (TR1)	7	C3
Nose Filter Board (220 ~ 240 V machines only) (PCB8)	8	B4
Circuit Breaker (220 ~ 240 V machines only) (CB1)	9	B3
DC Power Supply Board (PCB3)	10	C9
AC Drive Board (PCB2)	11	C6
Auto Image Density Sensor (ADS Sensor) (S25)	12	D8
Main Control Board (PCB1)	13	F13

Description	Index No.	P to P Location
Scanner HP Sensor (S17)	14	G10
Platen Cover Sensor (S21)	15	D13
Exposure Lamp (L1)	16	A6
Exposure Lamp Thermofuse (TF3)	17	A6
Original Length Sensor-1 (S27)	18	D7
Lens Vertical HP Sensor (S16)	19	G10
Original Length Sensor-2 (S19)	20	D14
Original Length Sensor (Option for N. American models) (S33)	21	D11
Transfer Belt Contact HP Sensor (S24)	22	D12
3rd Scanner HP Sensor (S18)	23	F9
Upper Tray Paper Size Switch (Non-duplex machines only) (SW3)	24	G16
LCT Upper Limit Sensor (LCT machines only) (S11)	25	J13
By-pass Feed Paper Width Sensor (S1)	26	J16
Registration Sensor (S12)	27	H10
Upper Tray Upper Limit Sensor (Non-duplex machines only) (S5)	28	I16
Lower Tray Upper Limit Sensor (S8)	29	J16
By-pass Feed Paper End Sensor (S2)	30	H10
Vertical Guide Set Switch (Non-LCT machines only) (SW5)	31	K16
By-pass Feed Table Switch (SW1)	32	I10
Lower Tray Paper Size Switch (SW4)	33	H16
Lower Tray Heater (option) (H3)	34	A5
Drum Heater (H1)	35	A4
Lens Horizontal HP Sensor (S15)	36	H10
Total Counter (CO1)	37	D11
Front Cover Safety Switch (SW9)	38	C10
Main Switch (SW8)	39	C8
Auto Response Sensor (S23)	40	F1
Original Width Sensor (S26)	41	D8
Fusing Exit Sensor (S20)	42	D14
Optics Anti-condensation Heater (option) (H2)	43	A5
Optics Thermistor (TH3)	44	D4

Description	Index No.	P to P Location
Exit Cover Safety Switch (A211 machines only) (SW10)	45	C10
Drum Charge Thermistor (TH4)	46	I2
Image Density Sensor (ID) (S13)	47	I3
Upper Tray Paper End Sensor (Non-duplex machines only) (S3)	48	H16
Lower Tray Paper End Sensor (S6)	49	I16
Toner Density Sensor (TD) (S14)	50	I3
Toner End Sensor (S22)	51	D13
T High Voltage Supply Board (PCB6)	52	B12
Duplex Paper End Sensor (Duplex machines only) (S28)	53	K5
Duplex Turn Sensor (Duplex machines only) (S29)	54	K5
Duplex Feed Motor (Duplex machines only) (M14)	55	J8
Side Fence Jogger HP Sensor (Duplex machines only) (S31)	56	K6
Side Fence Jogger Motor (Duplex machines only) (M16)	57	K5
End Fence Jogger Motor (Duplex machines only) (M15)	58	K4
Duplex Entrance Sensor (Duplex machines only) (S30)	59	K6
Duplex Control Board (Duplex machines only) (PCB9)	60	J5
End Fence Jogger HP Sensor (Duplex machines only) (S32)	61	K6
Main Fusing Lamp (L2)	62	A7
Secondary Fusing Lamp (L3)	63	A8
Secondary Fusing Thermofuse (A208/A210/A211 machines only) (TF2)	64	B7
Main Fusing Thermofuse (TF1)	65	A7
Main Fusing Thermistor (TH1)	66	D12
Secondary Fusing Thermistor (A208/A210/A211 machines only) (TH2)	67	C12

Description	Index No.	P to P Location
Development Clutch (CL2)	68	D6
Toner Supply Clutch (CL1)	69	D5
Registration Clutch (CL4)	70	I10
By-pass Feed Clutch (CL5)	71	I10
LCT machines: LCT/By-Pass Pick up Solenoid Non-LCT machines: By-Pass Pick up Solenoid (SOL1)	72	I10
Relay Clutch (CL6)	73	K16
Lens Horizontal Drive Motor (M13)	74	G9
3rd Scanner Drive Motor (M11)	75	G8
Toner Bottle Drive Motor (M2)	76	D6
Upper Tray Pick-up Solenoid (Non-duplex machines only) (SOL4)	77	E16
Upper Tray Separation Solenoid (Non-duplex machines only) (SOL6)	78	F16
Lower Tray Pick-up Solenoid (SOL5)	79	F16
Lower Tray Separation Solenoid (SOL7)	80	F16
Upper- Paper Feed Clutch (Non-duplex machines only) (CL7)	81	E16
Lower Paper Feed Clutch (CL8)	82	E16
Lower Tray Lift Motor (Duplex machines only) (M4)	83a	G16
Lower Tray Lift Motor (Non-duplex machines only) (M4)	83b	G16
Lens Vertical Drive Motor (M12)	84	G8
Main Motor (M1)	85	D10
DC Board Cooling Fan Motor (A204/A206/A207 machines for N. American only) (M17)	86	I7
Exhaust Fan Motor 1 (M8)	87	D5
Exhaust Fan Motor 2 (A204/A206/A207 machines only) (M9)	88	D5
Junction Gate Solenoid (Duplex machines only) (SOL2)	89	G7
Scanner Drive Motor (M10)	90	F7
Transfer Belt Contact Clutch (CL3)	91	D12
Optics Cooling Fan Motor 1 (M6)	92	D4
Optics Cooling Fan Motor 2 (M7)	93	D5
Main Motor Control Board (PCB4)	94	D9
Upper Tray Lift Motor (Non-duplex machines only) (M3)	95	F16

Description	Index No.	P to P Location
LCT Pick-up Solenoid (LCT machines only) (SOL3)	96	J14
LCT Lift Motor (LCT machines only) (M5)	97	L11
LCT Lower Limit Sensor (LCT machines only) (S9)	98	J12
LCT Paper End Sensor (LCT machines only) (S10)	99	J13
LCT Interface Board (LCT machines only) (PCB11)	100	K12
LCT Cover Switch-2 (LCT machines only) (SW7)	101	K12
Tray Down Switch (LCT machines only) (SW2)	102	J13
LCT Cover Switch-1 (LCT machines only) (SW6)	103	J12
Lower Relay Sensor (S7)	104	J16
Upper Relay Sensor (S4)	105	I16